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MONTEREY, CALIFORNIA

THESIS

MODELS, ANALYSIS, AND RECOMMENDATIONS PERTAINING TO THE RETENTION OF NAVAL SPECIAL WARFARE'S MID-LEVEL OFFICERS

by

Nathan A. Scott

December 2013

Thesis Advisor:	Michael Jaye
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MODELS, ANALYSIS, AND RECOMMENDATIONS PERTAINING TO THE RETENTION OF NAVAL SPECIAL WARFARE'S MID-LEVEL OFFICERS

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requirements for the degree of

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Naval Special Warfare (NSW) is facing a substantial deficiency within its midgrade (8–15 years of active duty service) officer ranks. This thesis employs two different models in order to provide recommendations to the NSW Community Manager's office for potential changes that might improve retention of these officers. The NSW Community Managers should use findings from the annualized-cost-of-leaving model to improve near-term retention, and they should use recommendations from the analytical hierarchy process for improving long-term retention.

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LIST OF ACRONYMS AND ABBREVIATIONS

FY	fiscal year
NSW	Naval Special Warfare
LT	lieutenant
LCDR	lieutenant commander
CDR	commander
FAP	Financial Assistance Program
SEAL	sea air land
ACOL	annualized-cost-of-leaving
AHP	analytical hierarchy process
SRB	selective reenlistment bonus
BAH	bachelor assisted housing
BAS	basic allowance for subsistence
OCP	officer continuation pay
CSRB	critical skills retention bonus
YOS	years of service
NPRST	Navy Personnel Research, Study and Technology

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I.   INTRODUCTION

Losses within the Naval Special Warfare (NSW) Lieutenant Commander (LCDR) pay grade are at near all-time highs for fiscal year (FY) 2013.[1] The NSW Community Manager's office, the Navy Personnel Research, Studies & Technology (NPRST) department, the Navy Financial Assistance Program (FAP) department, and the Naval Postgraduate School have conducted studies directed at gaining further insight into separation and retention within the NSW community.[2] The NPRST department conducted analysis on factors influencing morale within the SEAL community;[3] the Navy FAP department conducted phone interviews of separated NSW officers in order to gain insight into individual reasons for separating from the community;[4] a master's thesis researched civilian business retention methods in order to provide NSW with additional options it might use for increasing retention.[5] As a result of these studies, the NSW Community Manager's office is actively looking at ways to improve retention.[6]

This thesis will analyze NSW's officer retention issue from both a financial and a non-financial perspective in order to improve retention within the NSW community. Chapter II will draw a financial comparison between military and civilian competencies through use of the annualized-cost-of-leaving (ACOL) model. Chapter III will use a method known as the analytical hierarchy process (AHP) in order to investigate what the decision making process for a midgrade SEAL officer might look like when faced with choosing between a military or civilian profession by comparing both objective and

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[1] Observations made in conjunction with the office of the Naval Special Warfare Community Manager, October 25, 2013.

[2] Jeromy Williams and Darin Evenson, "NSW Officer Community," *NSW Officer Detailing and Community Management Brief*, February 2013.

[3] Carol Newell, Kimberly Whittam, and Zannette Uriell, "2010 SEAL/SWCC/EOD/Divers Retention Quick Poll," *Navy Personnel Research, Studies, & Technology*, 10 June 2010.

[4] Caren Canal Aruoba, Katie Bucklew, Rich Franks, Bill Gallagher, and Jeff Merkle, *SEAL Officer Retention*, Family Advocacy Program, 2012.

[5] Walter Allman, Jonathan Fussell, and Marty Timmons, "High Value Talent: Identifying, Developing, and Retaining Naval Special Warfare's Best Leaders" (Master's thesis, Naval Postgraduate School, 2012).

[6] Observations made in conjunction with the office of the Naval Special Warfare Community Manager, October 25, 2013.

subjective criteria pertinent to each lifestyle. Chapter IV, the final chapter, will summarize data collected from both the ACOL and the AHP models in order to provide recommendations to the NSW community for improved near-term and long-term retention.

A.   SNAPSHOT: NSW GLOBAL COMMITMENTS SINCE 9/11

NSW has been committed to combat operations in Afghanistan for more than twelve years; for nine of those years (2003–2011) NSW was also committed to combat operations in Iraq. Additionally, NSW has been involved with combined security efforts and host-nation building on a worldwide scale (Philippines,[7] Africa,[8] etc.).[9] Over the last decade, through its worldwide involvements, NSW has developed, honed, and improved its operational capabilities; much of this experience resides within those SEAL operators serving from 2001 to the present. Unfortunately, though, "with the end to U.S. combat operations in Iraq and the drawdown for Afghanistan nearing, opportunities to forge an officer corps through actual combat experience are diminishing."[10]

B.   A CALL FOR STRATEGIC PLANNERS

In a speech given at the Naval Postgraduate School, General Charles Cleveland, Commander U.S. Army Special Operations Command, highlighted that U.S. Special Operations Force's senior leaders are replete with tactical knowledge, but lack strategic planning abilities.[11] Military strategic planning is cultivated from operational knowledge; operational knowledge builds upon tactical experience; tactical experience resides within those operators who have deployed in support of U.S. interests (Iraq, Afghanistan,

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[7] Bureau of Public Affairs, "U.S. Relations with the Philippines," *U.S. Department of State*, September 10, 2012, accessed September 25, 2013, http://www.state.gov/r/pa/ei/bgn/2794.htm.

[8] Kathryn Whittenberger, "Naval Special Warfare Assists In Building Kenyan Special Boat Unit," *America's Navy: Official Website of the United States Navy*, June 10, 2010, accessed September 25, 2013, http://www.navy.mil/submit/display.asp?story_id=53967.

[9] Military.com, "Naval Special Warfare Command (NSW)," *Military.com*, 2013, accessed November 29, 2013, http://www.military.com/special-operations/navy-special-warfare.html.

[10] Caren Canal Aruoba, Katie Bucklew, Rich Franks, Bill Gallagher, and Jeff Merkle, *SEAL Officer Retention*, Family Advocacy Program, 2012, 4.

[11] Charles T. Cleveland, "United States Army Special Operations Command," Speech, *Secretary of the Navy Guest Lecture Series* at the Naval Postgraduate School, Monterey, CA, September 6, 2013.

Philippines, etc.). Therefore, if the U.S. military wants to improve its strategic planning, it must retain its operators with tactical experience. This is not to say that increased retention is the sole solution for improved strategic planning—one must certainly consider education and training as well—but it does suggest that strategic planning builds upon a cadre with strong tactical experience. Because much U.S. tactical experience gains have occurred over the past twelve years, retaining mid-grade NSW leaders (senior O-3's to junior O-5's) has become even more critical.

C.   IDENTIFYING THE MIDGRADE OFFICER RETENTION PROBLEM

The current manning level for Lieutenant Commanders (LCDR or O-4) within NSW is 65.6% (see Figure 1).[12] FY 2013 LCDR losses amounted to 12.28%, nearly equal to NSW's historic high LCDR losses from FY 2011 (13.3%), and an increase from the 9.7 % LCDR losses for FY 2012.[13] For three years in a row, NSW has lost, on average, more than 10% of its leaders at the LCDR pay grade—all voluntary separations.[14]

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[12] Jeromy Williams and Darin Evenson, "NSW Officer Community," *NSW Officer Detailing and Community Management Brief*, February 2013.

[13] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations," *NSW Officer Detailing and Community Management Brief*, February 2013.

[14] Observations made in conjunction with the office of the Naval Special Warfare Community Manager, October 25, 2013.
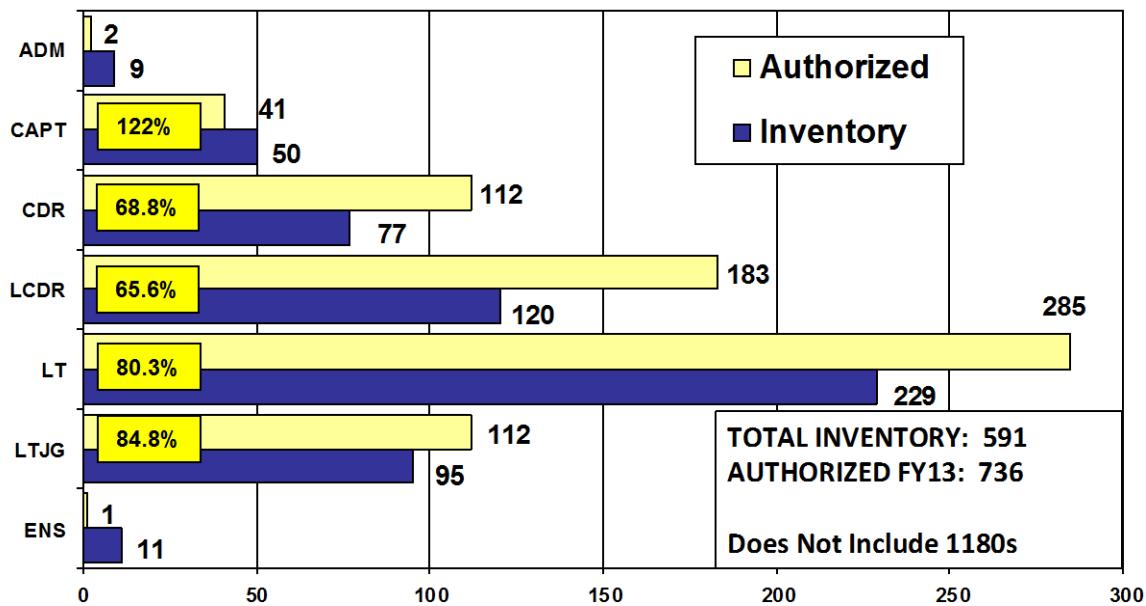
Figure 1.   SEAL Officer Manning (from Williams and Evenson, 2013).[15]

NSW currently has 736 authorized and funded officer billets. Of these 736 billets, NSW is only filling 591 (80%). NSW was also asked to grow its officer corps by 39% by the year 2015 (see APPENDIX A).[16] NSW's greatest shortfall comes within its LCDR pay grade, where it is billeted for 183 persons, but only fills 120 (65%). Additionally, NSW experienced its highest separation percentages within the O-4 pay grade during FY 2011, 2012, and 2013 where it lost 13.3%, 9.7%, and 12.28% of its LCDRs, respectively (see Figure 2).[17] One of NSW's greatest challenges has become increasing its LCDR retention in order to fulfill existing and future billeting requirements.

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[15] Jeromy Williams and Darin Evenson, "NSW Officer Community," *NSW Officer Detailing and Community Management Brief*, February 2013.

[16] Department of Defense, *The 11th Quadrennial Review of Military Compensation*, Office of the Under Secretary of Defense for Personnel and Readiness, Washington, DC: 2012 (Table 3–3. Special Operations Forces Staffing, Chapter 2, 42)

[17] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations" NSW *Officer Detailing and Community Management Brief*, February 2013.
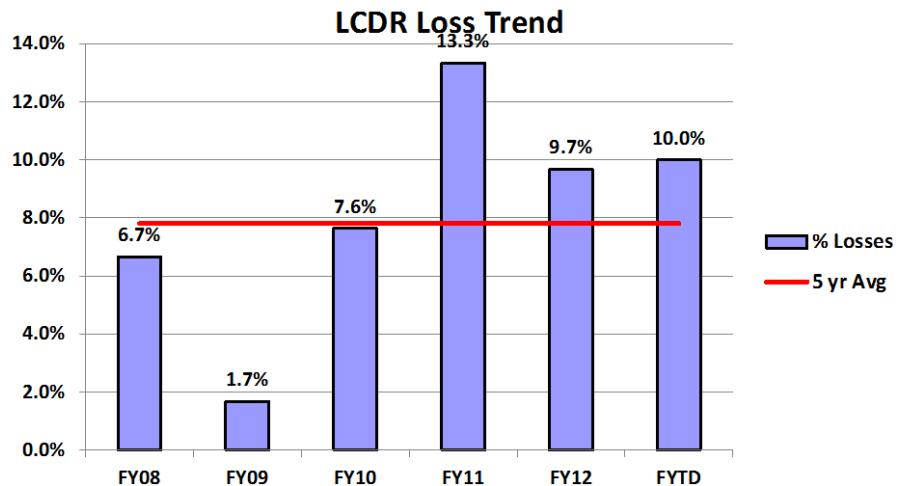
Figure 2.   SEAL LCDR Loss Trend.[18]

NSW experienced similar retention problems in the past when it implemented both an Officer Continuation Pay (OCP) aimed at retaining officers with 6–14 years of continuous service (implemented in 1999), and a Critical Skills Retention Bonus (CSRB) aimed at retaining officers with 15–25 years of continuous service (implemented in 2007). OCP implementation (maximum of $15K per year) increased Lieutenant manning to its current level of 80.3% (from less than 55%),[19] establishing a solid base from which to make LCDR and subsequently Commander (CDR) (68.8% manning) promotions. Currently, NSW's biggest manning gap and largest retention issue is among those officers with 8–16 years of service.[20]

Initiatives and recommendations for retention of NSW's midgrade officers include the following: development of a mentorship program (currently in place), analyzing reasons for separation (currently in place), developing a predictable deployment schedule (future initiative), restructuring the targeted retention bonus (future

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[18] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations," *NSW Officer Detailing and Community Management Brief*, February 2013.

[19] Jeromy Williams and Darin Evenson, "1130 By Grade," *NSW Officer Detailing and Community Management Brief*, February 2013.

[20] Jeromy Williams and Darin Evenson, "NSW Officer Community," *NSW Officer Detailing and Community Management Brief*, February 2013.

initiative), and reducing operational tempo (future initiative).[21] Under current global commitments, developing a reliable deployment schedule and reducing operational tempo (two of NSW's future initiatives) may be difficult. A restructure of the targeted retention bonus (NSW's other future initiative), however, could be implemented with U.S. congressional approval, and would involve shifting the CSRB (maximum of $25K per year) from officers with 15–25 years of service to include those with 11–16 years of service. Based on past successes from bonus programs (OCP in 1999), this presents a viable option for NSW.[22]

In "High Value Talent: Identifying, Developing, and Retaining Naval Special Warfare's Best Leaders," Allman, Fussell and Timmons researched financial and non-financial incentives used by civilian businesses that might be used within NSW for incentivizing its high performers toward retention.[23] This work, conducted by three midlevel NSW officers who graduated from the Naval Postgraduate School in 2012, defined "high-performers" as those within NSW who:

> are recognized both inside and outside an organization as being highly competent professionally and managerially. These are individuals who typically deliver more than expected. A High Performer is often characterized as being motivated for the job and possessing professional pride, determination, and integrity.[24]

This thesis uses the same definition for "high performers" in its analysis. In the "High Value Talent" thesis from 2012, some of the non-financial methods analyzed for improving the work-life relationship and retention of high performing SEAL officers included improving trust of senior leadership, flexible scheduling, work from home options, decreasing family moves, and allowing temporary sabbaticals. Among these non-financial methods, the "High Value Talent" thesis also mentioned six variations for

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[21] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations." *NSW Officer Detailing and Community Management Brief*, February 2013.

[22] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations." *NSW Officer Detailing and Community Management Brief*, February 2013.

[23] Walter Allman, Jonathan Fussell, and Marty Timmons, "High Value Talent: Identifying, Developing, and Retaining Naval Special Warfare's Best Leaders" (Master's thesis, Naval Postgraduate School, 2012).

[24] Allman, Fussell, Timmons, *High Value Talent*, 5.

financial retention, including pay for performance (not just rank), pay banding (dividing up performance groups and paying each group according to their performance), bonuses, stock options, retirement plans, and perks (vacations, etc.).[25]

This thesis will not delve into details of implementing any of the aforementioned methods of retention. Instead, it will first compare and analyze financial compensation amounts for a SEAL officer and his civilian counterpart in order to show NSW how it might increase retention percentages through finances alone. This thesis will then show NSW where any non-financial retention efforts should be focused.

D. COUNTER-THESIS: NSW IS HEALTHY AND MONEY SHOULD NOT MATTER

Some might contend that NSW does not have a midgrade officer retention problem, stating that with historic growth rates of between 3–5%, NSW should meet total inventory demands by fiscal year 2018 or 2022.[26] This argument is based on the idea that an increase in junior officers joining the community will eventually lead to enough officers promoting through the ranks to make the community whole. Doubters to any retention issues would also contest financial means for retention by arguing that SEALs motivated by money are staying in for the wrong reasons.

E. REFUTATION: EXPERIENCE, PERFORMANCE, AND COST

Whereas a non-military enterprise can assess talent from a pool of experienced talent, NSW cannot acquire new LCDRs with 8 or more years of experience. For example, should a civilian business recognize a need for an experienced accountant or program manager, it can solicit job application requests. This civilian business can then receive resumes from any number of accountants whom it deems qualified for the position, conduct interviews, and select an individual to fill the vacant position. NSW does not have this option. NSW cannot put out a job application notice for a SEAL LCDR with 8–10 years of combat experience because non-SEALs cannot fill SEAL

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[25] Allman, Fussell, Timmons, *High Value Talent*, 48–65.

[26] Jeromy Williams and Darin Evenson, "1130 Billets vs. Bodies." *NSW Officer Detailing and Community Management Brief*, February 2013.

LCDR requirements. NSW can only draw from what it has grown. Therefore, every separated midgrade SEAL equates to a loss of a SEAL officer whom the community has spent 8+ years training and developing.

Growth rates of 3–5% over the next five years (until 2018) may produce numbers and fill officer inventory demands (over all officer pay grades), but that projected rate does not account for the 10% in talent lost (for midgrade officers) every year until then.[27] Annual losses of 10% in the midgrade officer corps compared to 5% growth results in a net 5% loss every year. SEAL LCDR inventory within NSW illustrating an annual 5% growth gain, followed by an annual 10% loss due to separations, is shown in Figure 3.
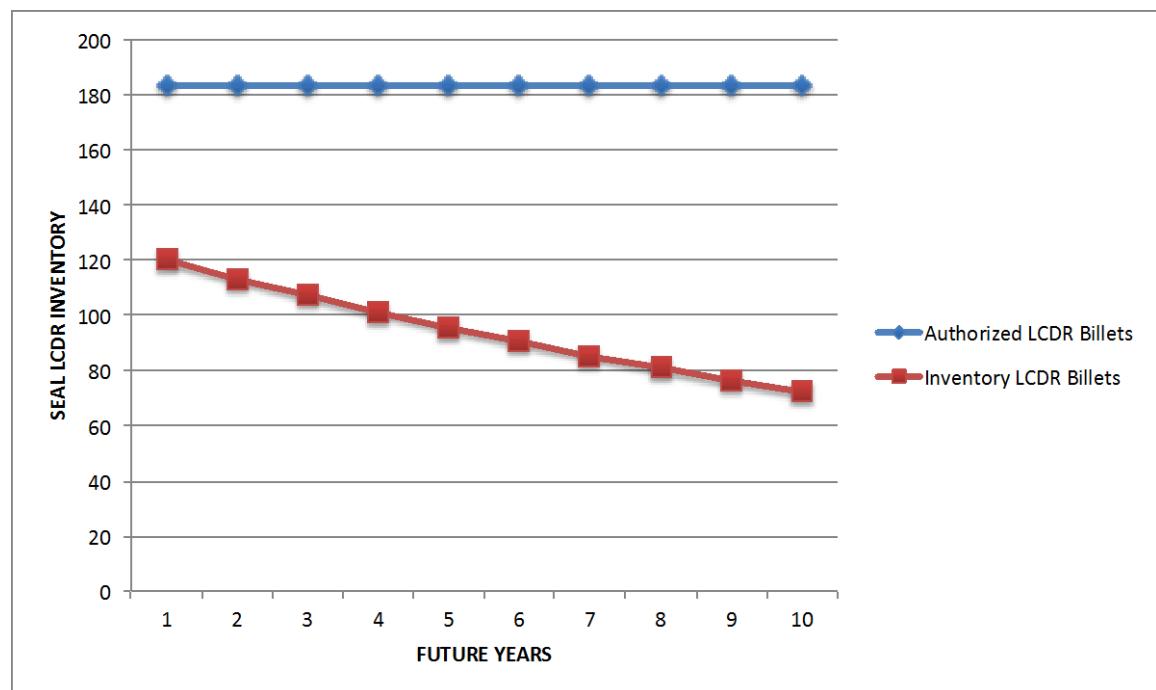
Figure 3.   SEAL LCDR Talent Lost Under Annual 5% Growth Gains Followed by Annual 10% Separation Losses.

Closing the gap between inventory LCDR billets and authorized LCDR billets can only be accounted for by increased promotions from the junior officer base. As seen in Figure 3, as time progresses the gap between LCDRs on hand (inventory) and LCDR

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[27] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations," *NSW Officer Detailing and Community Management Brief*, February 2013.

billets authorized will continue to widen. This gap represents lost experience and is representative of the retention problem within NSW's LCDR pay grade.

By the time a SEAL officer becomes a senior LCDR, more than $2 million dollars has been spent on his development.[28] Those making the claim that NSW wants only the right type of person to stay in the community—and that the wrong type of person is the individual who claims monetary incentives as a reason for staying in NSW—should re-assess their position: with more than 10 years of training invested in one of its SEAL leaders, would it not make sense for NSW to pay a person worth retaining an additional bonus each year, rather than accept talent loss and incur another $2 million dollar expense?[29]

Improving retention involves both financial and non-financial incentives. In the next two sections, this thesis will analyze retention from both a financial perspective and a non-financial perspective. Next, this thesis will use the ACOL model to assess near-term financial incentives through a comparison of the financial differences for a SEAL officer on active duty to his notional civilian counterpart.

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[28] Caren Canal Aruoba, Katie Bucklew, Rich Franks, Bill Gallagher, and Jeff Merkle, *SEAL Officer Retention*, Family Advocacy Program, 2012, 4.

[29] Caren Canal Aruoba, Katie Bucklew, Rich Franks, Bill Gallagher, and Jeff Merkle, *SEAL Officer Retention*, Family Advocacy Program, 2012, 4.

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II.   ANNUALIZED-COST-OF-LEAVING (ACOL) MODEL

A model developed by Warner and Goldberg in 1984 sought to quantify a service member's decision to remain in the military or separate from service. Known as the annualized-cost-of-leaving (ACOL) model, it is a mathematical comparison of the financial value of a continued military life to the individual versus the financial value of civilian life. The ACOL model was initially used in order to determine the effects of the selective reenlistment bonus (SRB) on the retention of Army, Navy, Marine Corps, and Air Force enlisted personnel. Findings from research conducted in 2001 determined that increased SRB resulted in increased retention.[30]

The ACOL model combines all elements of military pay (basic pay, basic allowance for housing (BAH), special pays, etc.) in its comparison to civilian equivalencies. The ACOL model is a Gross comparison of the salary portion of an individual's compensation package, and does not include monies associated with health care, retirement packages, stock options, etc. An officer may implement the ACOL model when the decision to stay in or get out is at hand. It is summarized in Equation (1).

MILITARY VALUE   **CIVILIAN VALUE**

$$\sum_{j=t+1}^{t+s} M_j \times (1+r)^{t-j} \quad <, >, \text{ or } = \quad \sum_{j=t+1}^{t+s} (C_j+v) \times (1+r)^{t-j} \tag{1}$$

where M_j is military pay (including any OCP) in year of service (YOS) j; t is the current YOS; s is the length of military career; C_j is the potential civilian pay in the same year j; and r is the current federal discount rate.[31]

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[30] Mathew S. Goldberg, *A Survey of Enlisted Retention: Models and Findings* (Alexandria, VA: The CNA Corporation, 2001), 61.

[31] Bankrate.com, "Federal Discount Rate," *Bankrate.com*, July 31, 2013, accessed August 3, 2013, http://www.bankrate.com/rates/interest-rates/federal-discount-rate.aspx.

From Equation (1), a SEAL will remain in the military if the "MILITARY VALUE" on the left-hand side of the equation is greater than the "CIVILIAN VALUE" on the right-hand side of the equation. Similarly, Equation (1) may be rewritten in terms of the taste factor, v, shown here in Equation (2):

$$\text{ACOL}_s = \frac{\displaystyle\sum_{j=t+1}^{t+s} (M_j - C_j) \times (1+r)^{t-j}}{\displaystyle\sum_{j=t+1}^{t+s} (1+r)^{t-j}} \quad <, >, \text{ or } = \quad v \tag{2}$$

For the ACOL model nonmonetary factors may be expressed with monetary values (e.g., "I will remain in the military only if they pay me \$1000 more per year than I could earn as a civilian"),[32] and are combined and referred to as the "taste factor," v. Changes in the value of v, and how it affects retention, will be explored in Section C of this chapter.

The ACOL is represented as the annualized ratio between military and civilian pay at a time, s, in one's career. Now, for purposes of Naval Special Warfare, the above equation presents three possibilities: (a) the maximum ACOL_s value is greater than the taste factor, and the officer will remain in the military; (b) the maximum ACOL_s value is less than the taste factor, and the officer will separate from the community; and (c) the

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[32] Mathew S. Goldberg, *A Survey of Enlisted Retention: Models and Findings* (Alexandria, VA: The CNA Corporation, 2001), 10.

$ACOL_s$ value is equal to the taste factor, and the officer is undecided about separation and retention. This thesis will focus on the first two possibilities, summarized as follows:

(a)　　$\text{Max}_s \{ACOL_s\} > v$; the officer will remain in the military.

(b)　　$\text{Max}_s \{ACOL_s\} < v$; the officer will separate from the military.

A.　FIRST GLIMPSE AT THE ACOL MODEL–A SIMPLE HYPOTHETICAL EXAMPLE

A simple hypothetical example for implementation of Equation (2) using values that compare a person in the military with a civilian counterpart who makes roughly the same annual compensation (Table 1) results in the ACOLs values found in Table 2. For demonstration purposes, C_j values from years 1–4 were $1000 less than their M_j counterpart, and C_j values for years 5–10 were $5000 more than their M_j counterparts. Table 2 is representative of the $ACOL_s$ values for each respective year of service, j, and Figure 4 is a graphical representation of the $ACOL_s$ values for this simple hypothetical execution of the ACOL model.

Year of Service, j	1	2	3	4	5	6	7	8	9	10
Civilian Pay, Cj	$33,961.88	$36,626.48	$55,464.80	$74,881.16	$84,581.72	$105,337.88	$106,774.88	$113,681.12	$116,284.88	$133,275.68
Military Pay, Mj	$34,961.88	$37,626.48	$56,464.80	$75,881.16	$79,581.72	$100,337.88	$101,774.88	$108,681.12	$111,284.88	$128,275.68
Federal Discount Rate, r	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075

Table 1.   Hypothetical Military and Civilian Compensation Values for Use in the ACOL Equation for j=10 Years of Service, and r = 0.75%.

Year of Service	1	2	3	4	5	6	7	8	9	10
ACOLs VALUE	$1,000.00	$1,000.00	$1,000.00	$1,000.00	-$182.13	-$970.19	-$1,533.05	-$1,955.17	-$2,283.46	-$2,546.07

Table 2.   ACOL$_s$ Amounts From Values Found in Table 1.
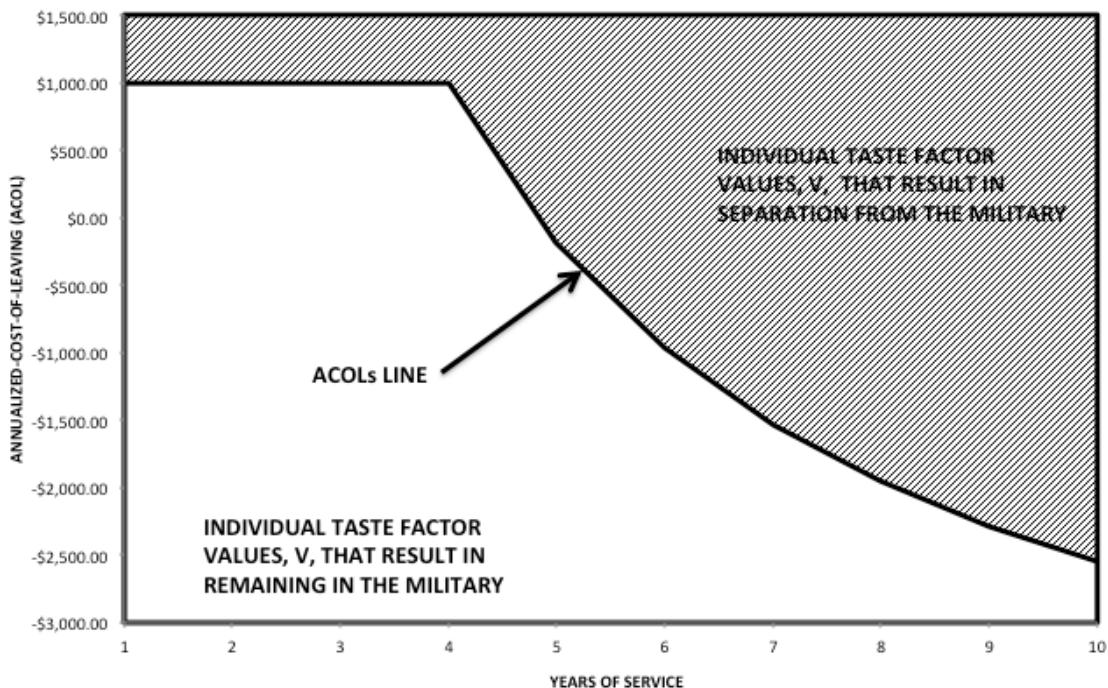
Figure 4.   Hypothetical ACOL Chart for C_j Values Roughly Equivalent to M_j.

Anytime the $ACOL_s$ value is greater than an individual's taste factor, v, the officer will remain in the military. Conversely, when the individual's taste factor exceeds the $ACOL_s$ value the officer will separate from the military. From our hypothetical values shown in Figure 4, this means that for any taste factor values (v) that fall above the charted line (or within the shaded grey area), the officer will separate from the military, and vice versa for any taste values falling below the charted line in Figure 4.

B.   IMPLEMENTATION OF THE ACOL MODEL

Implementation of the ACOL model requires collecting military compensation values (base salary, basic allowance for housing,[33] special pays, etc.) for each respective year of military service, s, for comparison to the closest corresponding yearly civilian

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[33] Department of Defense, "BAH Calculator," *Defense Travel Management Office: The DOD Center for Travel Excellence*, January 22, 2013, accessed September 14, 2013, https://www.defensetravel.dod.mil/site/bahCalc.cfm.

compensation amounts.[34] Table 3 is a summary of the annual compensation values for the 40–60th percentile civilians, 60–80th percentile civilians, 80–95th percentile civilians, the top 5th percentile civilians,[35] and the SEAL officer. Values for each annual compensation amount are specific to the calendar year. All civilian values were obtained from the U.S. Census Bureau, and are current through September 2013.[36] "SEAL Military Officer" values in Table 3 were calculated by adding base pay,[37] basic allowance for subsistence,[38] basic allowance for housing (an average of Norfolk and San Diego BAH rates - the two primary BAH reference cities for SEALs),[39] special pay (Diving, Free Fall, Demolition),[40] and the maximum OCP bonus amount allowed (starting at YOS 6, when OCP first becomes available) for each respective year.[41] Appendix B provides a summary of values used in calculating the annual "SEAL Military Officer" compensation amounts. All amounts are calculated as "Gross" in order to present a common ground for comparison between civilians and military personnel.[42]

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[34] U.S. Department of Commerce, "Table H-3. Mean Household Income Received by Each Fifth and Top 5 Percent," *U.S. Census Bureau*, September 17, 2013, accessed September 14, 2013, http://www.census.gov/hhes/www/income/data/historical/household/index.html.

[35] U.S. Department of Commerce, "Table H-3. Mean Household Income Received by Each Fifth and Top 5 Percent," *U.S. Census Bureau*, September 17, 2013, accessed September 14, 2013, http://www.census.gov/hhes/www/income/data/historical/household/index.html.

[36] U.S. Department of Commerce, "Table H-3. Mean Household Income Received by Each Fifth and Top 5 Percent," *U.S. Census Bureau*, September 17, 2013, accessed September 14, 2013, http://www.census.gov/hhes/www/income/data/historical/household/index.html.

[37] About.Com, "FY 2001 Military Pay Charts," *U.S. Military*, 2013, accessed September 14, 2013, http://usmilitary.about.com/library/milinfo/bl2001pay.htm (Same website was used for each respective year, 2001–2013)

[38] About.Com, "Basic Allowance For Subsistence," *U.S. Military*, 2013, accessed September 14, 2013, http://usmilitary.about.com/library/milinfo/blbas2001.htm (Same website was used for each respective year, 2001–1013)

[39] Department of Defense, "BAH Calculator," *Defense Travel Management Office: The DoD Center for Travel Excellence*, January 22, 2013, accessed September 14, 2013, https://www.defensetravel.dod.mil/site/bahCalc.cfm.

[40] Military.Com Benefits, "Military Pay Overview," *Military Advantage*, 2013, accessed September 14, 2013, http://www.military.com/benefits/military-pay/special-pay.

[41] Military.Com Benefits, "Military Pay Overview," *Military Advantage*, 2013, accessed September 14, 2013, http://www.military.com/benefits/military-pay/special-pay.

[42] Federal Reserve Bank of New York, "Historical Changes of the Target Federal Funds and Discount Rates," *Federal Reserve Bank of New York*, February 22, 2010, accessed September 14, 2013, http://www.newyorkfed.org/markets/statistics/dlyrates/fedrate.html (All r_j values used for the ACOL model were found within this website)

	1 YOS ENS	2 YOS ENS	3 YOS LTJG	4 YOS LTJG	5 YOS LT	6 YOS LT	7 YOS LT	8 YOS LT	9 YOS LT	10 YOS LCDR	11 YOS LCDR	12 YOS LCDR	13 YOS LCDR
Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CIV 40-60th Percentile	$44,411.00	$44,411.00	$44,411.00	$44,411.00	$46,301.00	$48,223.00	$49,968.00	$50,132.00	$49,534.00	$49,167.00	$49,842.00	$49,842.00	$49,842.00
CIV 60-80th Percentile	$70,026.00	$70,026.00	$70,026.00	$70,026.00	$72,825.00	$76,329.00	$79,111.00	$79,760.00	$78,694.00	$78,877.00	$80,080.00	$81,000.00	$82,000.00
CIV 80-95th Percentile	$151,438.00	$151,438.00	$151,438.00	$151,438.00	$159,583.00	$168,170.00	$167,971.00	$171,057.00	$170,844.00	$169,391.00	$178,020.00	$178,020.00	$178,020.00
CIV Top 5th Percentile	$263,896.00	$263,896.00	$263,896.00	$263,896.00	$281,155.00	$297,405.00	$287,191.00	$294,709.00	$295,388.00	$287,201.00	$311,444.00	$311,444.00	$311,444.00
SEAL Military Officer	$34,961.88	$37,626.48	$56,464.80	$75,881.16	$79,581.72	$100,337.88	$101,774.88	$108,681.12	$111,284.88	$128,275.68	$130,358.88	$134,973.12	$137,586.00

Table 3.　　Civilian and Military Compensation Values by Year from 2001 to 2013.

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A graphical representation of values found in Table 3 may be seen in Figure 5. The "SEAL Military Officer" compensation line is representative of the annual compensation that a SEAL officer can expect over a 13-year career. Numbers within Table 3 and Figure 5 are inclusive of a 13-year career in order to represent midgrade SEAL Officers with 8–12 YOS, the most prevalent retention-problem time period for NSW.
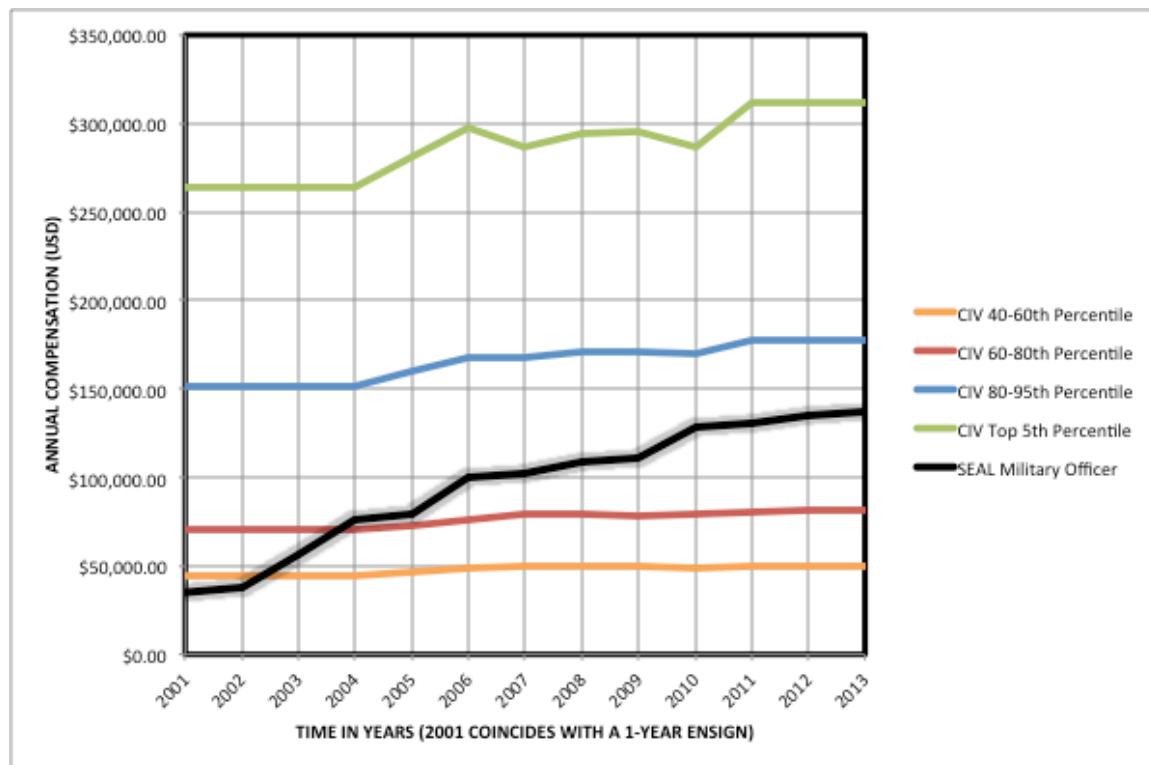
Figure 5.   Graphical Representation of Civilian and Military Compensation Values Found in Figure 5.

For ACOL calculations the military pay value, M_j, will be compared to its nearest civilian compensation percentile competitor. This is to say that for the years 2001–2003 military pay will be compared to the civilian 40–60th percentile; for years 2004–2009 military pay will be compared to the civilian 60–80th percentile; for years 2010–2013

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military pay will be compared to the civilian 80–95th percentile. This year-by-year comparison will be conducted within the ACOL model in order to illustrate the effects of military promotions through the eyes of a SEAL officer as he compares himself to his nearest civilian competitor.

C. DETERMINING THE TASTE FACTOR

To implement the ACOL model one must next determine the applicable taste factor for a SEAL officer in 2010 (with 10 YOS). As mentioned earlier, the taste factor allows one to summarize nonmonetary factors for an individual faced with making a decision whether to separate or stay on active duty. Equation (3) is representative of the calculation necessary for determining the taste factor.

$$v = \text{annual premium} + \text{above model prediction} \qquad (3)$$

The following statement is an example of the *annual premium*: "I will remain in the military only if they pay me $1000 more per year than I could earn as a civilian."[43] The *annual premium* for this individual would be equal to $1000. Continuing with this example, suppose a SEAL requiring an additional $1000 *annual premium* also knows that his potential civilian earnings are $2000 above the model's civilian compensation predictions. In this case, the *above model prediction* for the individual would be $2000. The taste factor for this person would be the sum of the *annual premium* and the *above model prediction*, or $3000. It is important to note that the taste factor could be negative if the *annual premium* or the *above model prediction* from Equation (3) summed to a negative value. If people prefer military life then the *annual premium* value will be negative. Similarly, if the potential civilian earnings were below the model's civilian compensation predictions, then the *above model prediction* value would be negative.

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[43] Mathew S. Goldberg, *A Survey of Enlisted Retention: Models and Findings* (Alexandria, VA: The CNA Corporation, 2001), 10.

Observations made from a survey of separated SEAL officers[44] with an average of 8.9 years of service result in an average civilian earning potential for separated military officers of $173,222.[45]

An executive placement firm (headhunter), with experience in placing military personnel, gathered data on ex-military officers with an average of 7.5 years of service. Observations made in conjunction with the executive placement firm result in an average civilian earning potential of $180,483 for separated military officers.[46]

For this ACOL model, the civilian annual compensation equivalent for a SEAL officer with at least 7.5 years will be the mean of the Survey Average and Headhunter Average from above, or $176,852. This value represents the potential civilian pay portion of the above model prediction from Equation (3). Of note, values for civilian compensation have remained relatively steady from 2008–2013.[47] Because the values have remained relatively steady, one can assume that values for 2013 are similar to those from 2008. Thus, civilian compensation values for 2013 are equal to civilian compensation values from 2012 for Table 3, Figure 5, and any subsequent ACOL analysis that will be performed later.

Referring back to Table 3 and Figure 5, a SEAL officer's annual compensation at the ten YOS mark is closest to the civilian 80–95th percentile average when compared to its next nearest competitor, the civilian 60–80th percentile. Because the SEAL officer's annual compensation is most closely equal to the 80–95th percentile average, this value will be used for taste factor calculations. The civilian compensation prediction value for the civilian 80–95th percentile in 2010 was $169,391. The *above model prediction* for the

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[44] Institutional Review Board (IRB) restrictions for this thesis only allowed for nine individuals to be surveyed. IRB protocol number NPS.2013.0080-IR-EP7-A.

[45] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: What is your current (or anticipated new job) annual monetary compensation (base pay plus total benefits package).

[46] Sarah Ashby, *Background Summary of Military Personnel* (San Francisco, CA: The Waterman Group, September 27, 2013).

[47] U.S. Department of Commerce, "Table H-3. Mean Household Income Received by Each Fifth and Top 5 Percent," *U.S. Census Bureau*, September 17, 2013, accessed September 14, 2013, http://www.census.gov/hhes/www/income/data/historical/household/index.html.

SEAL LCDR, then, is the difference between the potential civilian pay ($176,852) and the civilian compensation prediction ($169,391), or $7,461. The taste factor equation, Equation (3), may now be rewritten as v = *annual premium* + $7,461. For a SEAL officer whose annual premium is $1000, the taste factor becomes v = $1000 + $7,461, or $8,461. We will use this taste factor value to demonstrate its role in the ACOL model.

D.   THE TASTE FACTOR AND ITS PLACE IN THE SEAL OFFICER ACOL MODELS

Using the values from Table 3 and following the process used in the example from Section A of this chapter, we obtain the data displayed in Table 4 and 5. Figure 6 is an ACOL chart depicting a comparison of the SEAL officer's compensation with his nearest civilian competitor.

Year of Service, j	1	2	3	4	5	6	7	8	9	10	11	12	13
Civilian Pay, C_j	$44,411.00	$44,411.00	$44,411.00	$70,026.00	$72,825.00	$76,329.00	$79,111.00	$79,760.00	$78,694.00	$169,391.00	$178,020.00	$178,020.00	$178,020.00
Military Pay, M_j	$34,961.88	$37,626.48	$56,464.80	$75,881.16	$79,581.72	$100,337.88	$101,774.88	$108,681.12	$111,284.88	$128,275.68	$130,358.88	$134,973.12	$137,586.00
Federal Discount Rate, r	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075

Table 4.   Military and Civilian 80–95th Percentile Compensation Values for Use in the ACOL Equation for j=13 Years of Service, and r = 0.75%.

Year of Service	1	2	3	4	5	6	7	8	9	10	11	12	13
ACOL$_s$ VALUE	-$9,449.12	-$8,121.80	-$1,446.79	$358.29	$1,618.93	$5,281.23	$7,709.15	$10,291.82	$12,696.09	$7,494.07	$2,665.19	-$989.56	-$3,889.59

Table 5.   ACOL$_s$ Amounts From Values Found in Table 4.
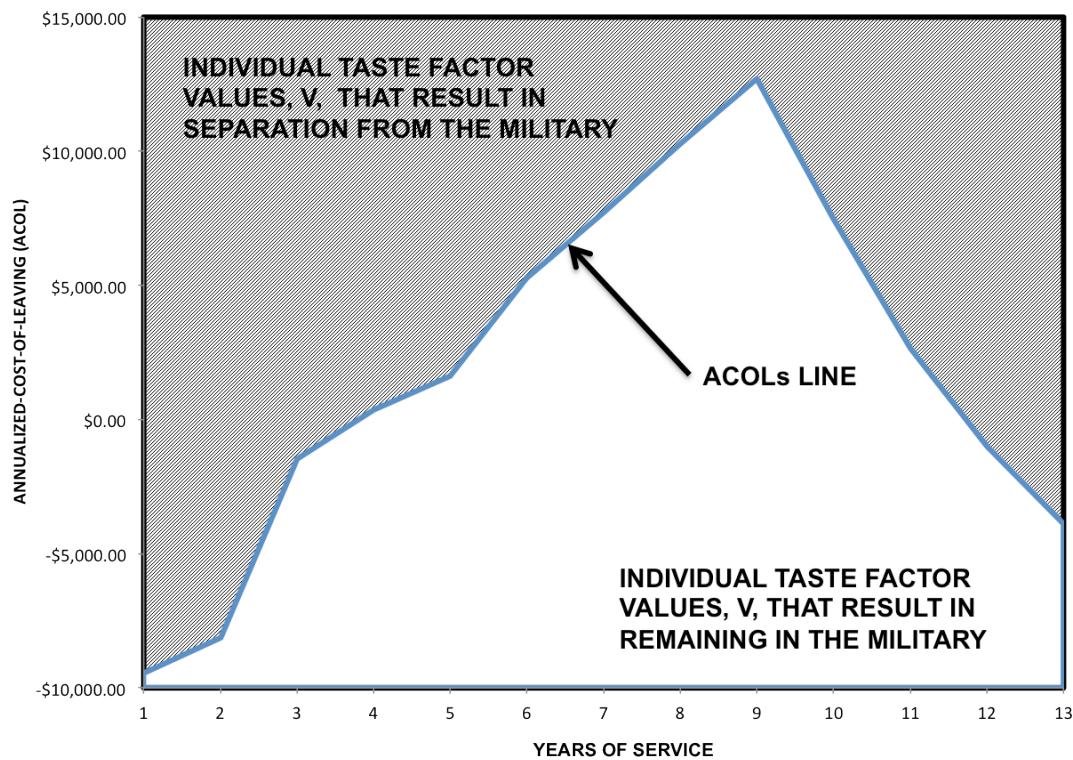
Figure 6.   ACOL Chart for C_j Values Equal to the Civilian 80–95th Percentile
for Years 10–13.

Figure 6 shows that the ACOL value for the SEAL officer is increasing from years 1–9 before the steep decline seen from years 9–13. This is indicative of a growing cost for the SEAL officer to separate from the military, and is the case until a decision point highlighted between years nine and ten. It is between years nine and ten when the SEAL officer's annual compensation is most closely linked to the civilian 80–95th percentile (as a result of promotions, YOS, bonuses, etc.). From our taste factor calculations in the previous section, the potential civilian pay at the ten YOS mark (2010) was $7,461 more than the 2010 civilian 80–95th percentile annual compensation value used for calculations in Figure 6.

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The SEAL officer contemplating separation from the military at ten years of service will have an $8,461 taste factor value from the previous section, which falls within the shaded area shown in Figure 7. This indicates that the SEAL officer would separate from the military.
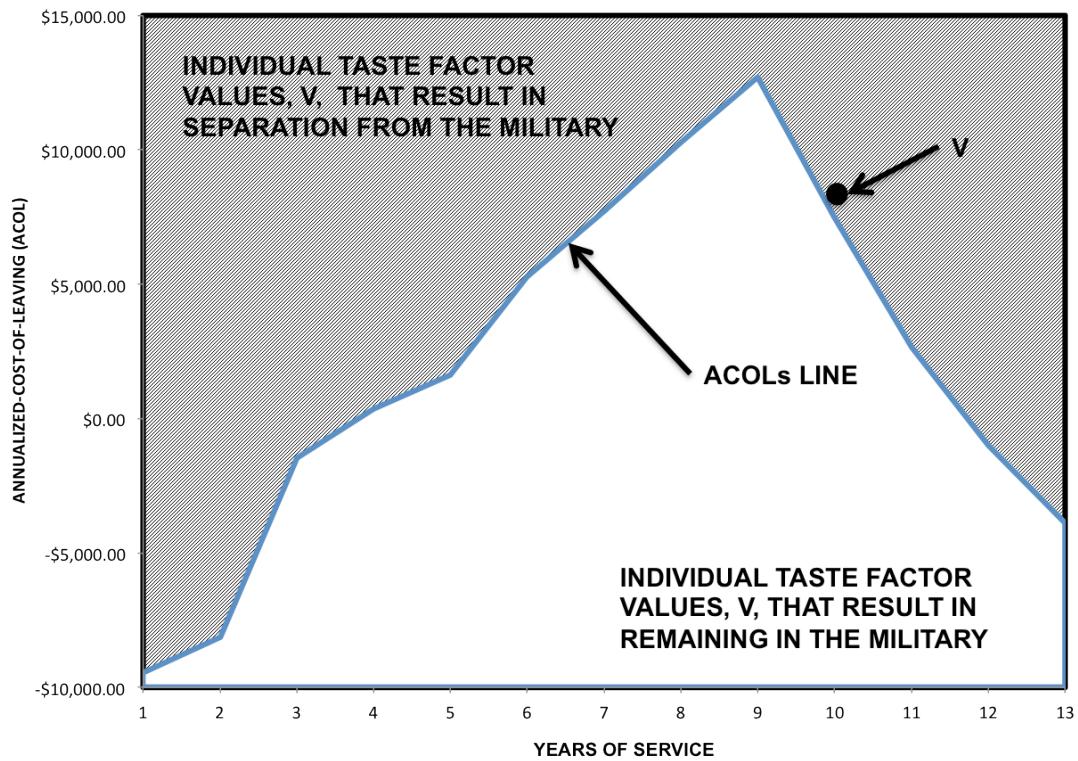
Figure 7.   ACOL Chart for C_j Values Equal to the Civilian 80–95th Percentile for Years 10–13, With the Addition of Calculated Taste Factor, v.

E.   SENSITIVITY OF THE ACOL CHART

This section will give the reader insight into the sensitivity of the ACOL model by showing the effects on the charted $ACOL_s$ line created by first altering civilian compensation values for years 10–13 (in comparison to current military compensation values), and next by increasing the Federal Discount Rate, r. Insight gathered from the sensitivity analysis will be used to provide potential financial fixes available to NSW that may rectify the separating officer whose taste factor falls within shaded "separate from military" portion of Figure 7. As a reminder, The $ACOL_s$ values shown in Figure 7 and

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represented by the blue line were calculated using military pay amounts in comparison to each respective civilian compensation percentile. Using this method of comparison between military and civilian compensation values resulted in a steep decline starting at YOS nine and continuing through YOS 13. Figure 8 is representative of what the ACOL$_s$ line would look like if a SEAL officer continued to compare his salary after YOS 9 to the civilian 60–80th percentile, instead of the civilian 80–95th percentile used in Figure 7.
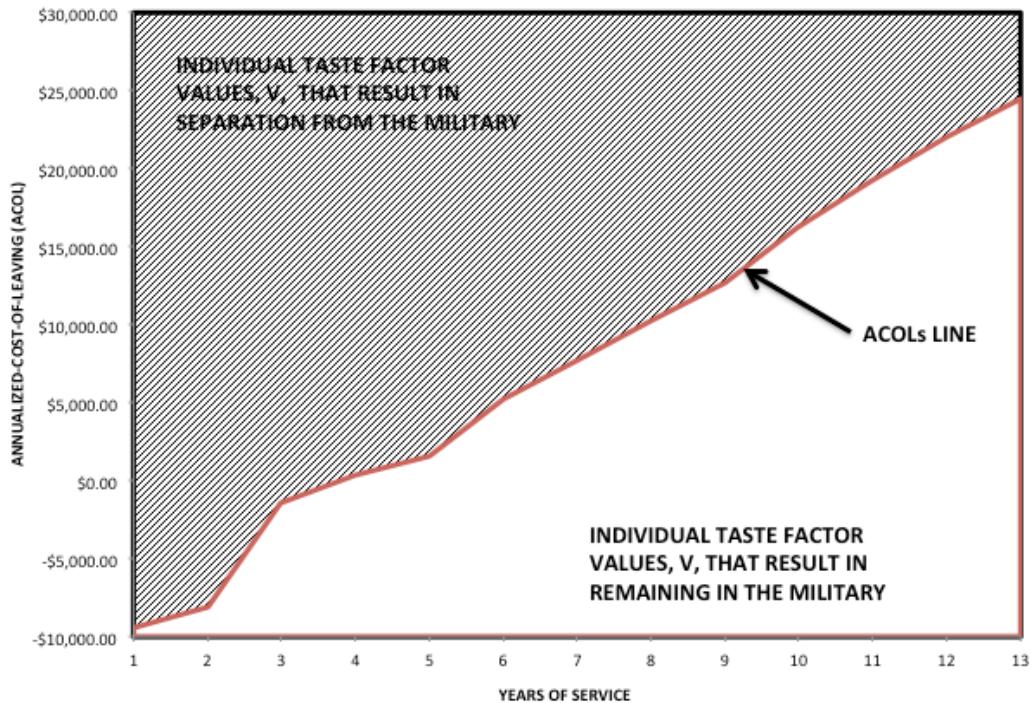
Figure 8.   ACOLs Values When Military Compensation is Compared
to Civilian 60–80th Percentile for YOS 10–13.

Notice within Figure 8 that the ACOL$_s$ line increases as a function of time. In other words, the area below the ACOLs line (the red line from Figure 8) will continue to grow larger over time, and the value to the SEAL officer will be greater within the military than it will be within the civilian sector. Thus, if a SEAL were to compare himself to the civilian 60–80th percentile, then the SEAL officer would remain in the military.

Figure 9 is representative of what happens to the SEAL officer's ACOL model when he is comparing himself to the civilian top 5th percentile for YOS 10–13. Instead of the positive slope in Figure 8, the ACOL for this comparison yields a steep negative slope. For a SEAL officer who is considering life as a civilian after YOS 9 and who believes he will be able to obtain a position as a civilian within the top 5th percentile, the cost of separating grows substantially smaller every year he remains in the military (from Table 6, $ACOL_9 = \$12,696.09$, $ACOL_{10} = -\$3894.76$, $ACOL_{11} = -\$19,407.95$, etc.).

Year of Service, j	1	2	3	4	5	6	7	8	9	10	11	12	13
Civilian Pay, C_j	$44,411.00	$44,411.00	$44,411.00	$70,026.00	$72,825.00	$76,329.00	$79,111.00	$79,760.00	$78,694.00	$287,201.00	$311,444.00	$311,444.00	$311,444.00
Military Pay, M_j	$34,961.88	$37,626.48	$56,464.80	$75,881.16	$79,581.72	$100,337.88	$101,774.88	$108,681.12	$111,284.88	$128,275.68	$130,358.88	$134,973.12	$137,586.00
Federal Discount Rate, r	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075	0.0075
ACOLs VALUE	-$9,449.12	-$8,121.80	-$1,446.79	$358.29	$1,618.93	$5,281.23	$7,709.15	$10,291.82	$12,696.09	-$3,894.76	-$19,407.95	-$31,965.36	-$42,397.57

Table 6.   Military and Civilian Top 5th Percentile Compensation Values for Use
in the ACOL Equation for j=13 Years of Service, and r = 0.75%.
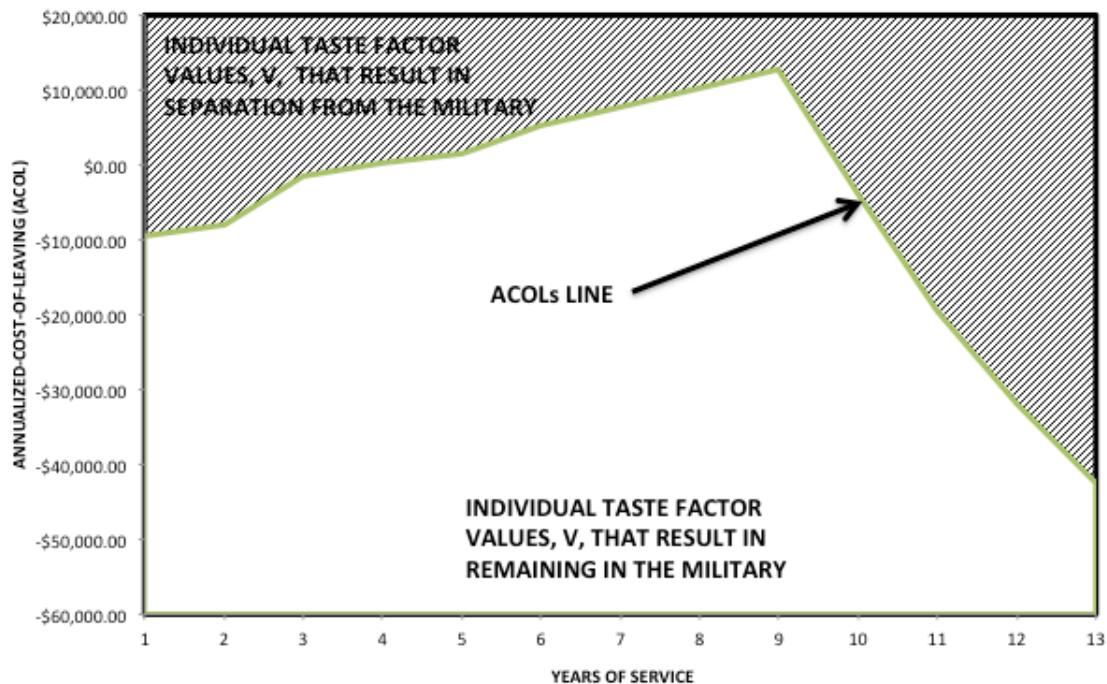
Figure 9.   ACOLs Values When Military Compensation is Compared to Civilian Top
5th Percentile for YOS 10–13.

For the SEAL officer confronted with the ACOL calculations shown in Figure 9, the area above the $ACOL_s$ line (the green line from Figure 9) grows increasingly larger over time. In other words, this SEAL officer will likely separate from the military.

Figure 10 summarizes ACOL calculations where military pay is kept constant, and its respective civilian pay competitor is varied. It is a graphical summary of ACOL calculations from Figure 7, Figure 8, and Figure 9. It is shown to demonstrate the sensitivity of the ACOL model to changes within the civilian compensation values.
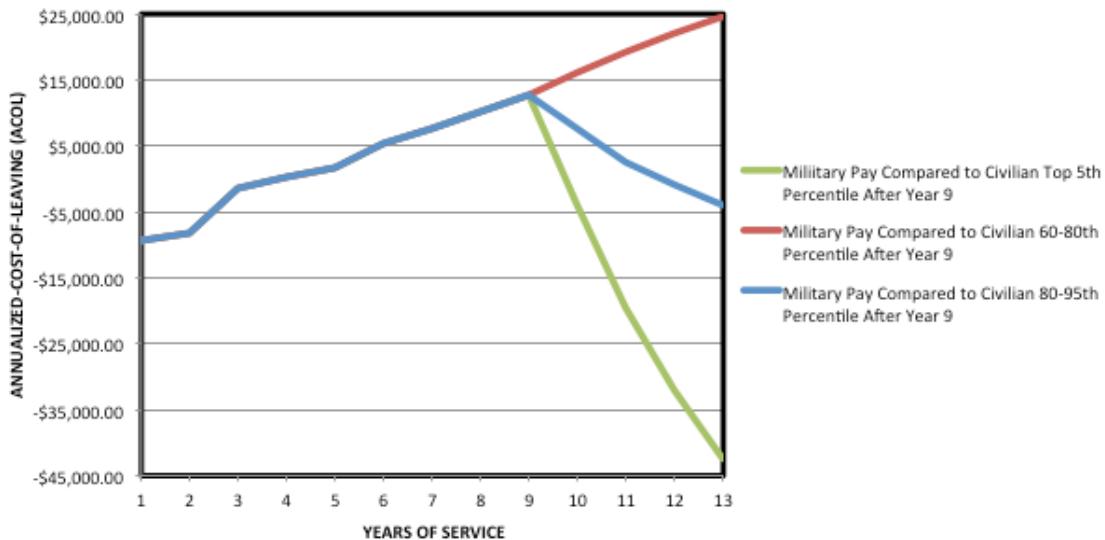
Figure 10. An Overlay Chart Comparing ACOLs Values for Military Pay Compared to
Civilian Top 5th Percentile, Civilian 60–80th Percentile, and Civilian 80–
95th Percentile for YOS 10–13.

Figure 11 presents the sensitivity of the ACOL model as it pertains to the Federal
Discount Rate, r. The blue line seen in Figure 11 represents the current SEAL officer
$ACOL_s$ line calculated using the current (November 2013) Federal Discount Rate,
0.75%.[48] The purple line in Figure 11 represents $ACOL_s$ when an increased Federal
Discount Rate is used, in this case r = 5%—this might represent an unrealistic rate at
present, but is used in this figure in order to demonstrate the effects of r on the ACOL
model. The difference between the two $ACOL_s$ lines is slight, but shows that the
increased r tends to "flatten" out the $ACOL_s$ line. That is to say that the positive slope
from YOS 1–9 for r = 5% is less than the positive slope from YOS 1–9 for r = 0.75%; the
negative slope from YOS 9–13 for r = 5% is less than the negative slope for YOS 9–13
for r = 0.75%. In other words, an increase in the Federal Discount Rate will have only
slight impact on ACOLs.

48 Bankrate, *Federal Discount Rate*, Bankrate.com, updated November 06, 2013, accessed November
12, 2013. Website: http://www.bankrate.com/rates/interest-rates/federal-discount-rate.aspx.

Effects of Federal Disount Rate Increase
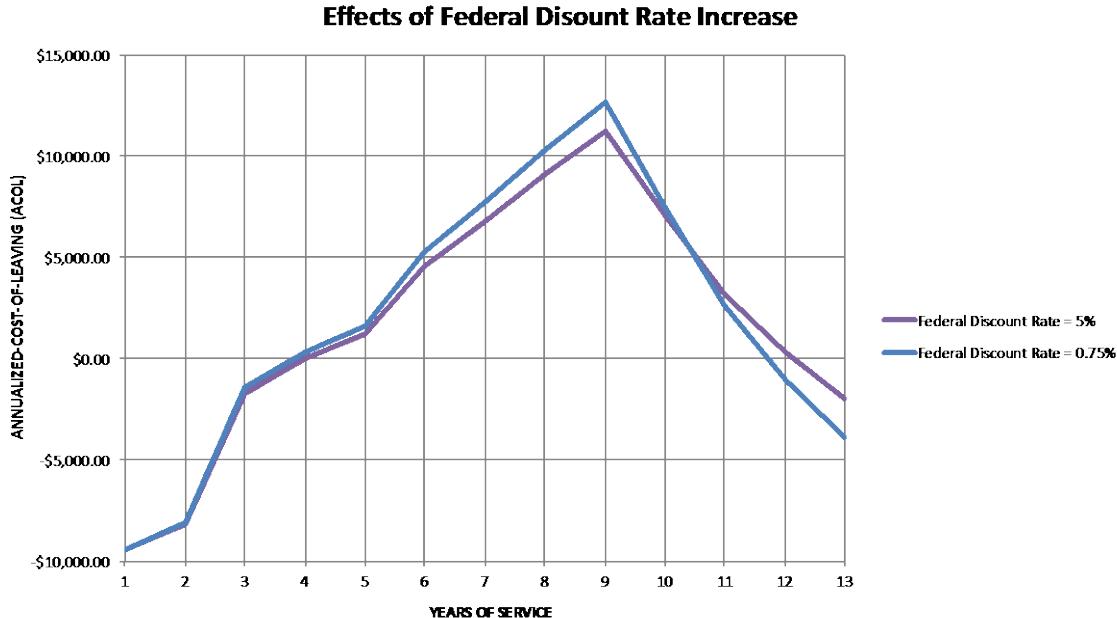
Figure 11.   Effects of an Increased Federal Discount Rate on the ACOL Model.

F.   EFFECTS OF INCREASED MILITARY PAY ON THE ACOL MODEL

The previous section analyzed the sensitivity of the ACOL model by taking a look at how changes in the civilian compensation values (C_j) and changes in the Federal Discount Rate affected $ACOL_s$ values. This section will investigate effects from increased military pay on $ACOL_s$ values.

Figure 12 is representative of the effects of increased military pay on the ACOL model. As shown in Figure 12, the taste factor, v, falls above the $ACOL_s$ line created by comparing military pay with its respective closest civilian compensation competitor (blue line). As a reminder, civilian 80–95th percentile values for YOS 10–13 have been used in calculations because those values are closer to the SEAL officer pay for YOS 10–13 than the civilian 60–80th percentile pays for the same period, and because they are closest to the annual civilian compensation equivalent for a SEAL officer deciding between separation and retention.

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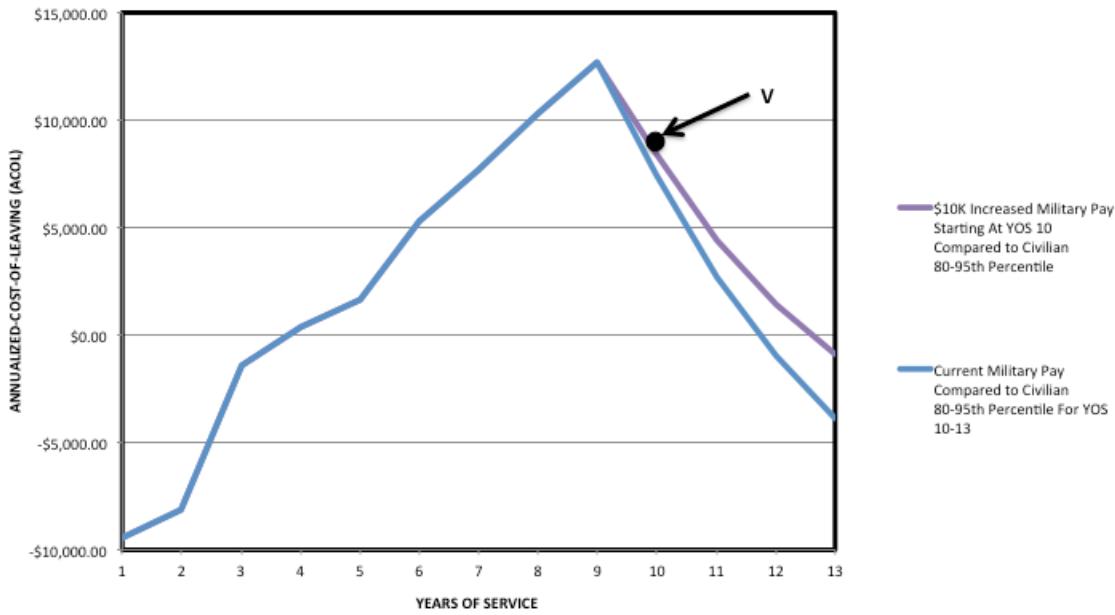
Figure 12.   Taste Factor, v, with ACOLs Values for Current Military Pay and Military Pay With a $10K Increase Starting at YOS 10.

The purple line in Figure 12 represents the change in the ACOL model for a SEAL officer if a $10K compensation increase is injected at YOS 10, 11, 12, and 13. Specifically, Figure 12 shows the effects of a $25K Critical Skills Retention Bonus (CSRB)—a $10K compensation increase over the $15K OCP bonus available to a SEAL officer for YOS 6–14—implemented at YOS 10. The $25K CSRB, the largest bonus the U.S. government currently authorizes for its military operators, is currently not offered to the SEAL officer until YOS 15.[49] By increasing the SEAL officer pay for YOS 10–13, the taste factor now falls just above the new purple $ACOL_s$ line ($ACOL_{10}$ = $8,460.79 and v = $8,461). For a CSRB of $25K offered starting at YOS 10, the SEAL officer that is considering a life as a civilian still maintains a taste value that will separate from the military, though the values are very close.

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[49] Jeromy Williams and Darin Evenson, "Officer Incentives," *NSW Officer Detailing and Community Management Brief*, February 2013.

Figure 13 shows the effects of a $25K CSRB implemented at YOS 9, represented by the purple curve. Notice that the taste factor now falls below the new purple $ACOL_s$ line ($ACOL_{10}$ = $9,434.75 and v = $8,461). For a CSRB of $25K offered starting at YOS 9, the SEAL officer that is considering a life as a civilian has a taste factor that will remain in the military.
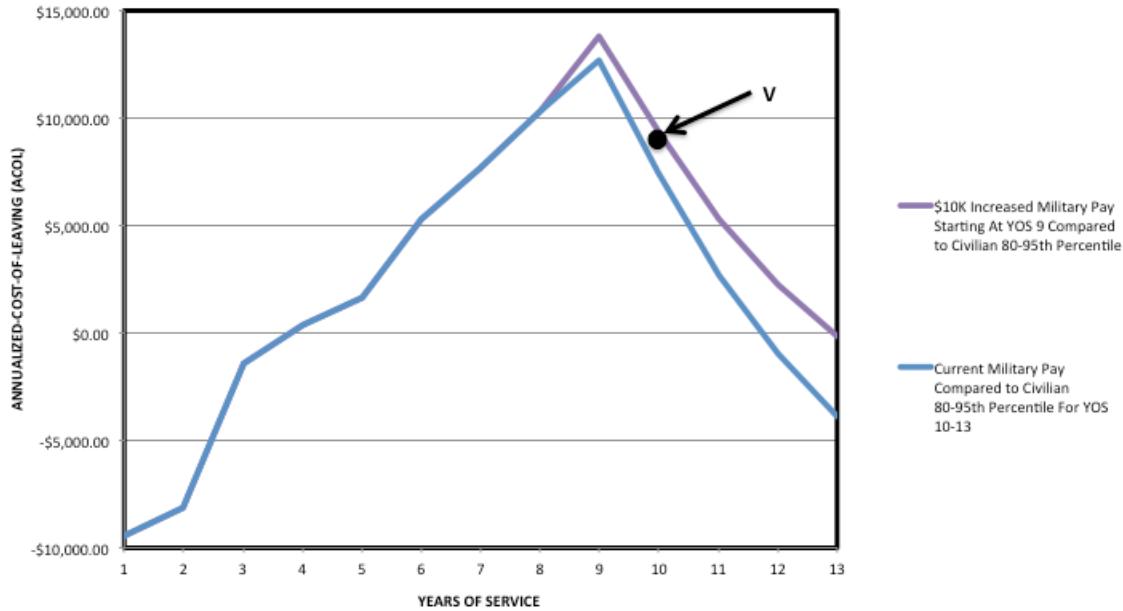
Figure 13.   Taste Factor, v, with ACOLs Values for Current Military Pay and Military Pay With a $10K Increase Starting at YOS 9.

Figure 14 shows the effects of a $25K CSRB implemented at YOS 8 and is represented by the purple line. Figure 14 was created to demonstrate the effects, from a $10K increase implemented one year earlier than Figure 13, on the buffer between the taste factor and the new ACOLs line (the purple line). For Figure 13, the CSRB created a $973.75 buffer between retaining and separating. Now, with the CSRB implemented at YOS 8, the taste factor is $1,955 less than its respective $ACOL_{10}$ value ($10,416.02). For a CSRB of $25K offered starting at YOS 8, the SEAL officer who is considering life as a civilian will remain in the military.
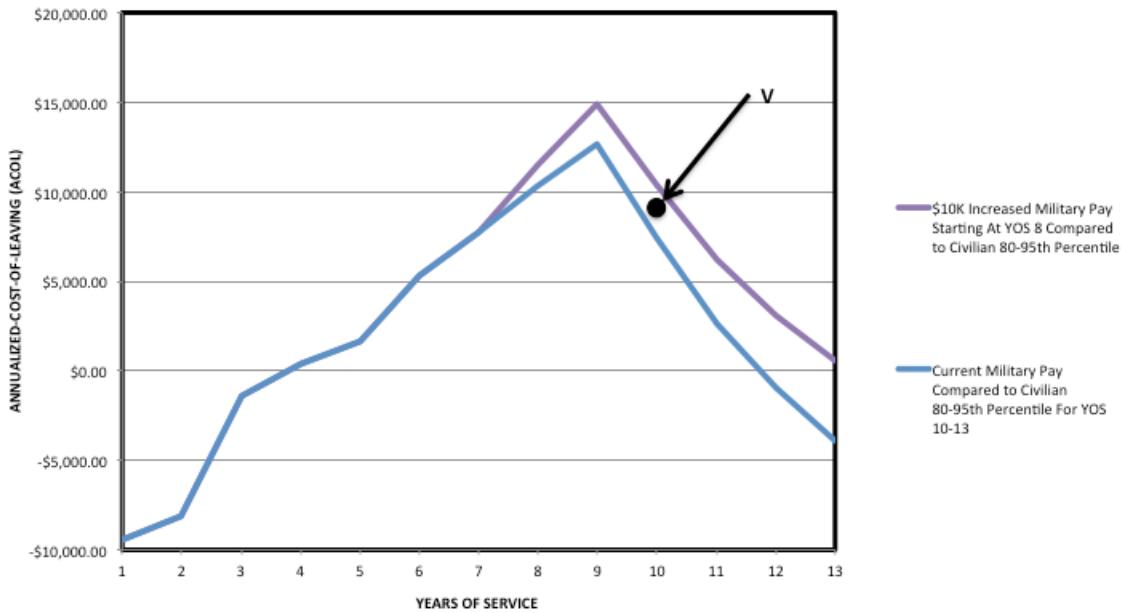
Figure 14. Taste Factor, v, with ACOLs Values for Current Military Pay and Military Pay With a $10K Increase Starting at YOS 8.

The decision is dependent on the value the SEAL officer places on his taste factor's annual premium. Figure 14 is representative of the effect from increasing the buffer between the ACOL$_s$ line (purple) and the taste factor. If a SEAL officer has an *annual premium* of $3000 (resulting in a v = $10,461), vice the $1000 used for the taste factor in Figure 14, then his taste factor will continue to fall above the ACOL$_s$ line (compare with ACOL$_{10}$ = $10,416 for the purple ACOL$_s$ line), and he will separate from the military. Keeping the taste factor under the ACOL$_s$, line and within the "remain in military" area of the chart is accomplished by increasing the buffer between the ACOL$_s$ line—through increased pay earlier in the SEAL officer's career.

G.   THE EFFECTS OF A LUMP SUM CSRB BONUS ON THE ACOL MODEL

Lump sum bonus contracts aimed at improving retention have been used by NSW before. The OCP bonus was initially started in 1999 in order to retain junior officers within NSW,[50] and was offered in one of two forms: (1) the individual could opt for

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[50] Jeromy Williams and Darin Evenson, "Officer Incentives," *NSW Officer Detailing and Community Management Brief*, February 2013.

equal payment installments over the life of the contract (2) or the individual could opt for a 50% lump sum received for year one of the contract followed by equal payment installments of the remaining 50% for each year of the remaining life of the contract. Lump sum bonuses, vice equal payment installments, have been shown to improve retention efforts by 80%.[51] Similar to the OCP bonus contracts, NSW also offers officers with 15–25 YOS a $25K per year CSRB. The SEAL officer can opt to receive the CSRB in the same forms as the junior officer was able to receive the OCP, via equal payment installments or via a lump sum payment option.

The Naval Special Warfare Community Manager's office is considering a restructure of the current Critical Skills Retention Bonus to include SEAL officers near 10 YOS.[52] The previous section showed the effects of the CSRB on the ACOL model if the member was paid $25K each year starting at YOS 10, 9, and 8. Figure 15 shows the effects of an eight-year CSRB bonus contract of $25K per year (totaling $200K) to the SEAL officer with a 50% lump sum ($100K) received for the first year of the contract at YOS 10, followed by seven equal installments of $14,285 paid out over the next seven years of the contract.

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[51] James Hosek and Christine Peterson, *Reenlistment Bonuses and Retention Behavior* (Santa Monica, CA: RAND Corporation, 1985), 1.

[52] Observations made in conjunction with the office of the Naval Special Warfare Community Manager, October 25, 2013.
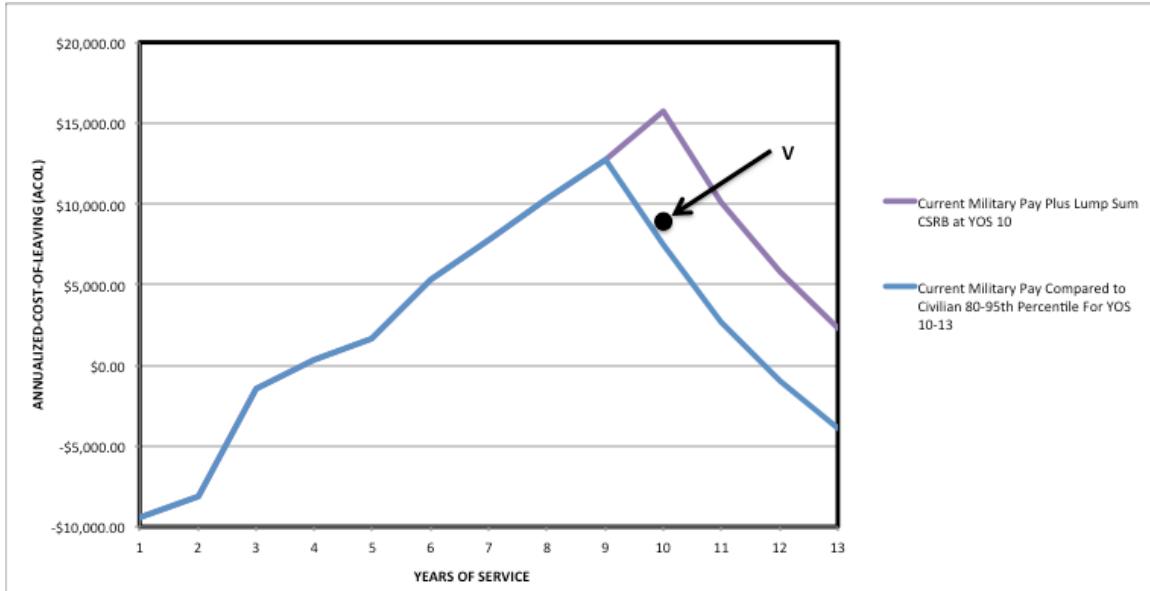
Figure 15.   Taste Factor, v, with ACOLs Values for Current Military Pay With a 50% Lump Sum CSRB at YOS 10.

The Taste Factor in Figure 15 is now well below the $ACOL_s$ line residing within those taste factor values that will opt to remain in the military. A 50% lump sum bonus received at YOS 10 places the Taste Factor (v=$8,461) $7,250 below the $ACOL_s$ line at YOS 10. It also keeps the taste factor $1,639 under the $ACOL_s$ line for YOS 11. The monetary incentive depicted in Figure 15 presents a viable solution for the NSW community in improving retention of its midlevel officers beyond the critical ten-year decision point.

H.   ACOL CONCLUSIONS

The costs of separating from active duty increase over YOS 1–9 for a SEAL officer. At YOS 10, however, the costs for separating from active duty begin to decrease as competing civilian compensation values begin to be markedly greater than the SEAL officer's compensation. For a SEAL officer interested in separation, there exists a legitimate taste for entering the civilian market after YOS 9 as he nears the critical halfway point to military retirement. The potential for increased compensation within the civilian sector increases the taste factor for the SEAL officer while simultaneously decreasing the cost of separating from the NSW community.

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The ACOL model is a good tool for use in determining near-term financial fixes for the NSW community because it presents a clear comparison between the SEAL officer's pay and his perceived civilian counterpart. Based on the ACOL model, the right financial incentives made by the NSW community would have an immediate impact on improved retention. The ACOL examples in this chapter demonstrated viable near-term fixes for the retention of NSW's midlevel officers.

The ACOL model does not, however, address any systemic or long-term organizational concerns the NSW community might have. There may be issues affecting retention within the NSW community that cannot be fixed immediately. If these issues are non-monetary then the ACOL model cannot address them. For these non-monetary issues, another model will be required. The next chapter will introduce the analytical hierarchy process, a model that might be used by the NSW community for identifying any long-term concerns that might improve retention.

III. ANOTHER PERSPECTIVE: THE ANALYTICAL HIERARCHY PROCESS

Every officer comes to a point in his/her career where two alternatives are present: (1) stay in, or (2) get out. Deciding between these two alternatives can be difficult, as there are generally several factors or criteria driving one's decision toward either of the options. Some of these criteria may be objective in nature; some may be subjective. A process for weighing both objective variables such as pay, bonuses, etc., and non-financial or subjective variables such as time away from family, job satisfaction, etc., factors may provide insight into how NSW might best approach affecting the retention of its midgrade officers.

One process for creating a way to make direct comparisons between variables with established, measureable properties and variables with no established scale of measurement is the analytical hierarchy process (AHP).[53] AHP allows one to "express the intensity of people's feelings with numbers,"[54] by systematically evaluating the importance of each criterion as it relates to each of the other criterion.

AHP involves five steps. First, one must identify the alternatives between which one is deciding. Second, one must identify and define the most applicable criterion under which the alternatives will be compared. Third, one must determine the criterion weights—accomplished by conducting a pair-wise comparison of each criterion's importance in relation to the others. Fourth, one must build an eigenvector. Fifth, one uses the eigenvector to determine a final alternative ranking. The following sections will walk the reader through the five steps required when using the AHP.[55]

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[53] Thomas L. Saaty, "Relative Measurement and Its Generalization in Decision Making: Why Pairwise Comparisons are Central in Mathematics for the Measurement of Intangible Factors – The Analytic Hierarch/Network Process," in *Rev. R. Acad. Cien. Serie A. Mat (RACSAM)*, submitted by Francisco Javier Giron (Real Academia de Ciencias: Spain), 253.

[54] Saaty, "Relative Measurement," 256.

[55] William Fox, "AHP Template Version 2_DA4410 Jan 2013," *Models of Conflict*, Naval Postgraduate School: January 15, 2013.

In order to explore different parameters of the AHP model, two AHP examples will be examined. The first AHP example will be referred to as the "hypothetical AHP example," and will guide one through the mechanics of how the analytical hierarchy process works. A separate AHP example will appear in the second half of this chapter for exploration of changes in criterion types and changes in criterion weights. This second AHP example will be referred to as the "adjusted AHP example," and will analyze the effects of criterion changes on the overall AHP model.

A. STEP ONE: IDENTIFY THE ALTERNATIVES

For a first look at how the AHP model works we will start with the "hypothetical AHP example." This example will use civilian compensation alternatives from the previous ACOL chapter for comparison to the military life. For this hypothetical AHP example an officer deciding whether or not to stay in or get out might be faced with three alternatives: (1) remain in the military (2) take on a civilian job comparable to the 60–80th percentile of civilian wage earners, or (3) take on a civilian job comparable to the 80–95th percentile of civilian wage earners. Recall that when faced with these three alternatives the SEAL officer opted to remain in the military when he compared himself to the civilian 60–80th percentile, and without any increase in military compensation he opted to separate from the military when he compared himself to the civilian 80–95th percentile.

B. STEP TWO: IDENTIFY AND DEFINE THE CRITERIA

For the objective and subjective criteria used in this hypothetical AHP example, the factors affecting the officer's decision will be the following seven criteria: (1) level of risk to one's life (2) annual compensation or salary (3) retirement benefits (4) time away for deployments (5) job satisfaction (6) health benefits (7) time away for training. A chart summarizing values for each of the three alternatives and seven criteria may be seen in Table 7.

AHP COMPARISON CHART		WEIGHTING OF THE CRITERIA						
		Risk	Annual Compensation	Retirement Benefits	Time Away: Deployments	Job Satisfaction	Health Benefits	Time Away: Training
ALTERNATIVES	Remain in Military	High	$128,275.00	~48K/year guranteed pension	90 days/year	good	100% covered	104 days/year
	Civilian 60-80th Percentile	Low	$78,877.00	<$30,158/year average	0 days/year	low	$14,125/year	<27 days/year
	Civilian 80-95th Percentile	Low	$169,391.00	$30,158/year average	0 days/year	moderate	$14,125/year	27 days/year

Table 7.   AHP Chart Depicting Hypothetical NSW Officer Alternatives and Criteria.

Note the differences in the units of measure for each criterion. Monetary units are used when comparing salaries, while a preferential—low, moderate, good—scale is used when comparing respective job satisfaction levels to the individual.

As a control factor and in order to remain consistent with the previous chapter, annual compensation values for calendar year 2010 were used for comparison between the military officer with ten years of service, the civilian 60–80th percentile, and the civilian 80–95th percentile. A military officer with 10 YOS represents an officer that has reached the halfway point to military retirement, a decision point for the individual over which the government has the most influence. The criteria used for comparison of the three alternatives when determining what the "best" decision would be for a SEAL officer with ten years of service are defined as follows:

1. Risk

As a subjective measure of the physical and mental risk to one's life, this criterion was used to compare the levels of risk associated with one who remains in the military versus one who opts to become a civilian. Risk levels remain constant, regardless of marital status. For this hypothetical AHP example, risk was assumed to be greater for a SEAL on active duty when compared to his civilian counterpart, as a result of live-fire, free-fall, diving, etc.; for comparison within this hypothetical AHP example, a higher numerical score will be placed in conjunction with the civilian options when compared to the military because it will be assumed that a SEAL officer who is deciding between retention and separation values less physical risk, and, therefore, he views life as a civilian as better than life as an active duty SEAL. Values used for this comparison will be explained in a later section when conducting a pair-wise comparison within each criterion.

2. Annual Compensation

Annual compensation is an objective measure of compensation received for services rendered, and a higher compensation value is seen as better than a low compensation value for this hypothetical AHP example. In order to standardize this

hypothetical AHP example, data collected sought to compare a SEAL officer with 10 YOS in 2010 to his civilian counterparts within the 60–80th percentile and 80–95th percentiles in 2010. From Table 7, values used for military compensation, the civilian 60–80th percentile, and the civilian 80–95th percentile, were $128,275.00, $78,877.00, and $169,391.00 respectively. These are the same values used for calculations in the ACOL model for YOS 10. For this hypothetical AHP example, the highest compensation value ($169,391.00) will receive a higher numerical score when compared to the other two compensation values; the military compensation value ($128,275.00) will receive a higher score when compared to $78,877 and a lower score when compared with the $169,391.00.

3. Retirement Benefits

This criterion is subjective in nature, and seeks to compare retirement benefits received for a military officer (valued at the ten-year mark) opting to stay in for at least 20 years, with his civilian counterpart's retirement benefits. Military retirement benefits for this hypothetical AHP example include a guaranteed government pension of 50% of the average of the base pay for the last three years of service.[56] Benefits received for the military person who retires at 20 years, then, are $4000/month (assumes estimates for a 20 year Navy Commander upon retirement – base pay values are based on 2010 values), or $48K/year. The average civilian retirement income in 2010 was $30,158/year. For purposes of this hypothetical AHP example, the military retirement package is viewed as better than its civilian counterparts because the package includes a guaranteed pension, the individual is already halfway to retirement, and it is greater in value than its civilian competitor ($48K/year compared to $30,158/year). The civilian 80–95th percentile retirement package will be greater than the civilian 60–80th percentile retirement package because its annual compensation is greater, thus it is assumed that more money could be put into retirement savings.

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[56] Military.com Benefits, "The Military Retirement System," *Military.com*, 2013, accessed November 16, 2013, http://www.military.com/benefits/military-pay/the-military-retirement-system.html.

4. Time Away: Deployment

This criterion sought to provide an objective look at the time spent away from home while on deployment. Similar to "Time Away: Training," for this hypothetical AHP example more time away from home was looked upon as worse than less time away from home. The "Time Away: Deployments" column from Table 7 listed 90 days/year for the SEAL officer, and 0 days/year for each of the respective civilian competitors. SEAL officers deploy 6 months (180 days) over a 2-year cycle.[57] 90 days/year was calculated by dividing 180 days by the 2-year cycle (180 days/2 years = 90 days/year). For this hypothetical AHP model, because less time away from home is looked upon as better than more time away from home, 0 days/year will receive a higher score than the 90 days/year. Values used for this comparison will be explained in a later section.

5. Job Satisfaction

A purely subjective criterion, for purposes of this hypothetical AHP example, defining job satisfaction takes into consideration the people one works with, the flexibility in one's work schedule, and perhaps most importantly, the value one places in the type of work being conducted. For this hypothetical AHP example, which is taking into consideration an officer with ten years of service, we assume that some part of the type of military work for the SEAL officer has changed—at the 10 YOS mark he assumes a managerial role, thereby shooting less, free-falling less, and diving less—and he now occupies the role of a "desk job." However, the SEAL officer who is considering life as a civilian also believes that his civilian job will likely also be that of a "desk job."[58] As to the quality of the people this SEAL officer works with, a statement from a participant from a recent survey may be summarized as, "I miss the quality of the people…you don't realize how great the guys are until you are no longer around them."[59]

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[57] Observations made in conjunction with a West Coast SEAL Team Operations Office, October 25, 2013.

[58] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: What type of work do you do (intend to do) now that you are no longer on active duty - Please answer any way you feel appropriate.

[59] A Participant From a Resent Survey, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey question: If there are any final comments you wish to add, please add them here.

For this hypothetical model, job satisfaction for the SEAL officer who remains in the military will be "good;" job satisfaction for the civilian 80–95th percentile, a "desk job" except without "the guys," will be "moderate;" job satisfaction for the civilian 60–80th percentile will be "low." When conducting the pair-wise comparison, "good" is better than "moderate," and "moderate" is better than "low."

6. Health Benefits

Without seeking to conduct an in-depth analysis of all the different types of medical and health benefits one can purchase for one's family, this criterion seeks to provide an objective comparison between health benefit costs for the SEAL officer when compared to his civilian counterparts. For the military person remaining on active duty, the government provides full health care benefits at no additional cost to the individual. For each of the civilian alternatives, employer-sponsored civilian family health benefits for 2010 averaged \$14,125 per year,[60] an additional cost to the individual opting for civilian life. For this criterion, the zero cost, full-coverage, health care benefits received for military service is seen as better than the full-coverage, \$14,125 per year, health care benefits for a civilian. Of particular note are upcoming changes within the health care system, when the Affordable Care Act goes into effect in January of 2014—new civilian health care costs for 2014 will be used in a later adjusted AHP model.[61] The effect of these changes on AHP and retention could well be an interesting topic for future research.

7. Time Away: Training

This criterion sought to provide an objective look at the time spent away from home for purposes of job training. For purposes of this hypothetical AHP example, less time away from home is looked upon as better than more time away from home, because it assumes that a SEAL officer with 10 YOS has a preference toward time at home with his spouse and/or children when compared to deployment or other factors that increase

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[60] Pat Kelley, "The Average Health Insurance Cost," *eHow.com*, 2013, accessed November 16, 2013, http://www.ehow.com/about_7275823_average-health-insurance-cost.html.

[61] The Henry J. Kaiser Family Foundation, "Health Reform: Subsidy Calculator – Premium Assistance for Coverage in Exchanges," *Kaiser Family Foundation*, 2013, accessed November 16, 2013, http://kff.org/interactive/subsidy-calculator/.

time away from home. The "Time Away: Training" column from Table 7 listed 104 days/year for the SEAL officer,[62] <27 days/year for the civilian 60–80th percentile, and 27 days/year for the civilian 80–95th percentile.[63] For this hypothetical AHP model, because less time away from home is looked upon as better than more time away from home, <27 days/year will receive a higher score than the other two, and 27 days/year will receive a higher score when compared to 104 days/year but a lower score when compared to <27 days/year. Values used for this comparison will be explained in a later section when conducting a pair-wise comparison within each criterion.

C. STEP THREE: DETERMINING THE CRITERION WEIGHTS

The AHP assists in making complex decisions even where subjective criteria are involved. For this example, the criteria have been ranked based on assumptions involving a military officer at the ten-year mark, with long-term goals in mind (annual compensation, retirement benefits, job satisfaction, etc.). This is the part of the example that can be tailored to specific individuals because one person might place job satisfaction as more of a priority than risk, etc. For this AHP model, here is the ranking of the criteria in order from "most important" to "least important": Risk, Annual Compensation, Retirement Benefits, Time Away: Deployment, Job Satisfaction, Health Benefits, Time Away: Training. As such, applying subjective weighting to the criteria arrives at the pair-wise comparison matrix shown in Table 8. Comparisons in Table 8 were done using the AHP model's 1–9 scale, where 1 equates to "A is of equal importance to B," and 9 equates to "A is of extreme importance when compared to B"— meaning it is more important than B.[64]

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[62] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: How many days per year (on average) did you spend away from home (for training or deployment) while on active duty within Naval Special Warfare? Training days were calculated using the survey average of 194 days/year, minus 90 days/year for deployments (180 day deployment every 2 years).

[63] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: How much travel is associated with your current (or proposed) position?

[64] Refer to Appendix C.

	Risk	Annual Compensation	Retirement Benefits	Time Away: Deploy	Job Satisfaction	Health Benefits	Time Away: Training
Risk	1	2	3	4	5	6	7
Annual Comp	0.5	1	2	3	3	4	6
Retirement Benefits	0.333333333	0.5	1	3	2	4	6
Time Away: Deploy	0.25	0.333333333	0.333333333	1	2	4	6
Job Satisfaction	0.2	0.333333333	0.5	0.5	1	2	4
Health Benefits	0.166666667	0.25	0.25	0.25	0.5	1	2
Time Away: Training	0.142857143	0.166666667	0.166666667	0.166666667	0.25	0.5	1

Table 8.   Hypothetical AHP Example Pair-Wise Comparison of Criterion.

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Table 8 is best read from left to right. Using "Risk" as an example of how to read the pair-wise comparison, one sees a numerical value of "1" placed at the intersection of the "Risk" row and the "Risk" column. A "1" from the pair-wise comparison scale (1–9) in this case means that "Risk" is of equal importance when compared to "Risk" (itself). At the intersection of the "Risk" row and the "Job Satisfaction" column one sees a numerical value of "5." In this case a "5" is indicating that for this hypothetical AHP example of a SEAL officer's opinions "Risk" is seen as more important than "Job Satisfaction" by a numerical value of "5" on the pair-wise comparison scale 1–9. The reciprocal of "5," or 1 divided by 5 (1/5 = 0.2), is placed in the spot where the "Job Satisfaction" row intersects the "Risk" row in order to express the same level of importance when "Job Satisfaction" is compared to "Risk."

Each column is normalized in order to determine individual criterion weights. Normalization of Table 8 results in criterion weights for use in this hypothetical AHP example found within Table 9.

Criterion Weights	Vector
Risk	0.3619471
Annual Compensation	0.2052167
Retirement Benefits	0.1355721
Time Away: Deploy	0.0889384
Job Satisfaction	0.0697824
Health Benefits	0.0460977
Time Away: Training	0.0342123

Table 9.   Criterion Weights for the Hypothetical AHP Example.

Table 9 represents a matrix that will be used in later calculations. From Table 9, one can see that "Risk" has the greatest value (0.3619471) compared to the other criterion. For this hypothetical AHP example, then, "Risk" holds the most importance. Each criterion now has a value for use in comparing one to another. It is important to note that it is within the criterion weights that one can figure out potential methods for influencing retention or separation of the military officer. For example, a military officer who places the highest criterion weight upon "Risk," as has been done in this

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hypothetical AHP example, might be influenced to separate or remain in the military by discussing other job alternatives that are higher or lower in risk (depending on the candidates desire in risk level). The sensitivity of values in Table 9 will be analyzed in a later section when an adjusted AHP example is implemented that uses different criteria with different criterion weights.

D.   STEP FOUR: BUILDING THE EIGENVECTOR

An eigenvector is a special vector that, when multiplied by a matrix, is equal to a special constant times that special vector.[65] This section will develop the eigenvector for use in multiplication with the matrix in Table 9. The eigenvector, as it applies to the AHP model, contains values within each of the criterion that, when multiplied by the original criterion weights, will provide the final overall ranking of the alternatives (remain in the military, or separate and take on one of the civilian alternatives). Building the eigenvector requires a pair-wise comparison and ranking of the three alternatives within each respective criterion. Tables 10–16 represent the pair-wise comparisons of each alternative within each criterion using the same 1–9 used for calculating the criterion weights. These tables may be read similar to the larger Table 8 matrix. Using the Table 11, "Alternatives versus Annual Compensation," as an example, the numerical value of "3" found at the intersection of the "Civilian 80–95th Percentile" row and the "Remain in Military" column is indicating that where annual compensation is concerned, the Civilian 80–95th Percentile is moderately better than the Remain in Military alternative.

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[65] Eigenvector (n.d.), Collins English Dictionary - Complete & Unabridged 10th Edition, Retrieved November 18, 2013, from Dictionary.com website: http://dictionary.reference.com/browse/Eigenvector.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.111111111	0.111111111
Civilian 60-80th Percentile	9	1	1
Civilian 80-95th Percentile	9	1	1

Table 10.   Alternatives Versus Risk.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	5	0.333333333
Civilian 60-80th Percentile	0.2	1	0.125
Civilian 80-95th Percentile	3	8	1

Table 11.   Alternatives Versus Annual Compensation.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	7	5
Civilian 60-80th Percentile	0.142857143	1	0.333333333
Civilian 80-95th Percentile	0.2	3	1

Table 12.   Alternatives Versus Retirement Benefits.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.333333333	0.333333333
Civilian 60-80th Percentile	3	1	1
Civilian 80-95th Percentile	3	1	1

Table 13.   Alternatives Versus Time Away: Deployment.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	8	7
Civilian 60-80th Percentile	0.125	1	0.2
Civilian 80-95th Percentile	0.142857143	5	1

Table 14.   Alternatives Versus Job Satisfaction.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	8	8
Civilian 60-80th Percentile	0.125	1	1
Civilian 80-95th Percentile	0.125	1	1

Table 15.   Alternatives Versus Health Benefits.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.25	0.333333333
Civilian 60-80th Percentile	4	1	2
Civilian 80-95th Percentile	3	0.5	1

Table 16.   Alternatives Versus Time Away: Training.

Pair-wise comparison and rankings within each respective criterion provide the information necessary to compute the eigenvector for use in determining final decision values. It is important to note that it is within each of the above pair-wise criterion comparisons that subjective values might be altered in order to tailor the AHP model to specific individuals. For example, within the "Alternatives versus Risk" matrix a numerical value of "9" is at the intersection of the "Civilian 60–80th Percentile" row and the "Remain in Military" column. This numerical value of "9" may be altered to a "2," depending on the individual's view of "Risk" as it pertains to his future military position, thus altering the resulting eigenvector values. The above pair-wise comparison within each respective criterion creates the eigenvector values found in Table 17. Table 18 and 19, on the other hand, are meant to demonstrate how the eigenvector values change when the pair-wise comparisons for "Risk" are changed from a numerical value of "9" to a numerical value of "2." By comparing the two "Risk" columns from Table 17 and Table 19, one may see eigenvector value changes.

	Risk	Annual Compensation	Retirement Benefits	Time Away: Deploy	Job Satisfaction	Health Benefits	Time Away: Training
Remain in Military	0.052631579	0.240566038	0.741533514	0.142857143	0.778759594	0.8	0.127659574
Civilian 60-80th Percentile	0.473684211	0.075471698	0.096171239	0.428571429	0.086231403	0.1	0.570921986
Civilian 80-95th Percentile	0.473684211	0.683962264	0.162295247	0.428571429	0.135009002	0.1	0.30141844

Table 17.   Eigenvector Values for Hypothetical AHP Example.

	Remain in Military	Civilian 60–80th Percentile	Civilian 80–95th Percentile
Remain in Military	1	0.5	0.5
Civilian 60-80th Percentile	2	1	1
Civilian 80-95th Percentile	2	1	1

Table 18.   Alternatives Versus Risk With a Numerical Value Change
from "9" to "2."

	Risk	Annual Compensation	Retirement Benefits	Time Away: Deploy	Job Satisfaction	Health Benefits	Time Away: Training
Remain in Military	0.2	0.240566038	0.741533514	0.142857143	0.778759594	0.8	0.127659574
Civilian 60-80th Percentile	0.4	0.075471698	0.096171239	0.428571429	0.086231403	0.1	0.570921986
Civilian 80-95th Percentile	0.4	0.683962264	0.162295247	0.428571429	0.135009002	0.1	0.30141844

Table 19.   Eigenvector Values After Numerical Value Changes in "Risk"
from "9" to "2."

Decreasing the pair-wise comparison value from "9" to "2" within the "Remain in Military" column from Figure 18 decreases the eigenvector values from 0.4736 in "Risk" column from Table 17 to 0.4 in the "Risk" column for Table 19. Recall from Table 10 that the "Risk" pair-wise comparison values for the "Remain in Military" row were 0.111. These values in Table 18 are now equal to "1" divided by "2," or 0.5. Because 0.5 is greater than 0.111 the eigenvector value for the "Remain in Military" row and "Risk" column in Table 19 is now greater than the equivalent eigenvector from Table 17 (compare 0.05263 to 0.2). Thus, the numerical value changes from "9" to "2" in the "Remain in Military" row for the pair-wise comparison leads to an increase in the "Remain in Military" eigenvector value.

E.   STEP FIVE: FINAL HYPOTHETICAL ALTERNATIVE RANKING

Multiplication of the resultant eigenvector values found in Table 17 with each of the respective criterion weights from Table 9 produces the vector of values depicted in Table 20.

	FINAL VALUE
Remain in Military	0.277244133
Civilian 60–80th Percentile	0.268251017
Civilian 80-95th Percentile	0.396271483

Table 20.   Final Values for Hypothetical AHP Example.

It is at this stage within the Analytic Hierarchy Process that one assesses values produced for a complex decision involving multiple alternatives, each with multiple criteria, for use in making a final decision. In this case, since the resultant "Civilian 80–95th Percentile" produces the highest final value, it is the best decision. Since the "Remain in Military" value is the next highest value, it is the second best decision. For this example, the "Civilian 60–80th Percentile" alternative has the lowest final value, making it the worst decision amongst the given alternatives.

If the individual in this hypothetical AHP example views his next position within the military to have "Risk" values represented in Table 18 (remember, the changes from

"9" to "2"), and the military offered to increase his annual compensation (changes in pair-wise comparison shown in Table 21) in order to make it more competitive with the Civilian 80–95th Percentile (the current best decision), the resultant final values change to those seen within Table 22.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	8	1
Civilian 60-80th Percentile	0.125	1	0.125
Civilian 80-95th Percentile	1	8	1

Table 21.   Alternatives Versus Annual Compensation With Numerical Value Changes.

	FINAL VALUE
Remain in Military	0.377788098
Civilian 60-80th Percentile	0.238164751
Civilian 80-95th Percentile	0.325813784

Table 22.   Final Values for Hypothetical AHP Example After "Risk" and "Annual Compensation" Pair-Wise Comparison Changes (Lower Military Risk and Increased Military Compensation).

Now, after decreasing the risk within the military officer's next position and increasing his pay, final values between the three alternatives have changed. Since the final value for the "Remain in Military" alternative is now the greatest value, the best decision for this individual is to remain in the military.

F.   AHP SENSITIVITY: MODEL CHANGES TO REFLECT DIFFERENT VIEWS AND OPINIONS

This section will analyze the sensitivity of the AHP model as it relates to changes in criterion and criterion weights in the previous example. To do this, changes will be made to the hypothetical AHP example from the previous sections. Since the analytical hierarchy process is designed to convert both subjective and objective criterion into a mathematical formula for use in making decisions between multiple alternatives, and the subjective and objective criterion may vary based on opinions of differing individuals, the following sections will explore how the AHP model changes due to variations in model parameters.

For purposes of clarity, the AHP example discussed in next sections will be referred to as the "adjusted AHP example." Table 23 is representative of the adjusted AHP example, and reflects the addition of three new criteria, "Leadership," "Stress on Relationships," and "Growth Potential," and changes within the "Health Benefits" criterion in order to reflect proposed 2014 healthcare reforms.

AHP COMPARISON CHART		WEIGHTING OF THE CRITERIA							
		Leadership	Stress on Relationships	Retirement Benefits	Health Benefits	Growth Potential	Job Satisfaction	Annual Compensation	Risk
ALTERNATIVES	Remain in Military	Reactive	194 days/year	~48K/year guranteed pension	100% covered	Standard Growth Potential for Every Officer	Good	$128,275.00	High
	Civilian 60-80th Percentile	Organized	< 27 days/year	<$30,158/year average	$12,700/year	Performance Based	Low	$78,877.00	Low
	Civilian 80-95th Percentile	Forward Thinking and Organized	27 days/year	$30,158/year average	$12,700/year	Performance Based +	Moderate	$169,391.00	Low

Table 23.   Adjusted AHP Chart Depicting New Criterion.

Table 23 reflects a different opinion than the earlier hypothetical AHP example. The new opinions reflected in this adjusted AHP example will manifest themselves in the criterion weights and the resultant final decision. This adjusted AHP example intends to analyze the prospect that reasons for separating or remaining in the military change from individual to individual, and so subsequent retention efforts made by leadership within NSW may also need to adjust from individual to individual. This adjusted AHP example is intended to show the reader the versatility of the AHP model in identifying the importance of selected criterion even when they may vary from individual to individual or over time.

G.   EXPLANATION OF ALTERNATIVES AND ANY NEW CRITERIA FOR USE IN THE ADJUSTED AHP EXAMPLE

The alternatives for the adjusted AHP example will remain the same as with the hypothetical AHP example, and attention will be focused on changes within the criterion. As shown in Table 23, the alternatives are: (1) remain in the military (2) take on a civilian job comparable to the 60–80th percentile of civilian wage earners, or (3) take on a

civilian job comparable to the 80–95th percentile of civilian wage earners. Table 23 also provides the outline for the new criterion used in this adjusted AHP example. For the objective and subjective criterion used in this adjusted AHP example, factors affecting the officer's decision were broken down into eight criteria: (1) leadership (2) stress on relationships (combines deployments and training time away from home) (3) retirement benefits (4) health benefits (5) growth potential (6) job satisfaction (7) annual compensation, and (8) risk. Explanations of any new criteria used in this adjusted AHP example are summarized below.

1.   Leadership

This criterion involves a person's desire to work under a well-organized and forward-thinking person or body of decision makers. Participants from a recent survey ranked issues with upper leadership within NSW as their number one reason for separating from the community.[66] It is for this reason "Leadership" will hold the greatest criterion weight in determining which alternative an individual should make. "Leadership" is a subjective criterion seeking to highlight the differences between good military leadership and perceived forward-thinking civilian leadership.

NSW leadership will initially be viewed as reactive. This view manifests itself in a plan for regionalization made by NSW leadership in 2010.[67] The plan, started in 2010, was executed in early 2012, and was reverted back to the original setup six months later.[68] For this adjusted AHP model, leadership for the civilian 60–80th percentile will be perceived as organized, and leadership for the civilian 80–95th percentile will be perceived as forward thinking and organized. Therefore, when NSW leadership is

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[66] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: Please elaborate your checked "Other" from above by typing any other criterion you feel were applicable to your decision to separate from active duty; please follow the scale system above for your new criterion (where 1 is least applicable, and 10 is most applicable).

[67] Observations made in conjunction with a West Coast SEAL Team Operations Office, October 25, 2013.

[68] Observations made in conjunction with a West Coast SEAL Team Operations Office, October 25, 2013.

compared to the leadership for the civilian 60–80th percentile and civilian 80–95th percentile, it will receive a lower score than the civilian competitors within pair-wise comparisons.

2. Stress on Relationships

This criterion represents the stress on the individual as a result of total time away from home. This criterion reflects both time away for deployments and time away for training for the SEAL officer, and it reflects time away for training for the civilian work life. For this adjusted AHP example, more time away from home was looked upon as worse than less time away from home. From Table 23, the 194 days/year listed for the "Remain in Military" alternative is representative of an average of values obtained from a recent survey sent to SEAL officers who opted to separate from the military.[69] This survey also asked participants to list the number of days/year they currently spend away from home in their job as a civilian. Participants listed an average of 27 days/year of travel associated with their current civilian positions.[70] Because this survey also found that the separated SEAL officer compensation average is most closely linked to that of the civilian 80–95th percentile ($173,222[71] for separated SEAL officers compared to $178,020[72] for the civilian 80–95th percentile), 27 days/year were used for the civilian 80–95th percentile. For purposes of comparison between alternatives, time away from home for the civilian 60–80th percentile was less than 27 days/year. For this criterion, the

[69] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: How many days per year (on average) did you spend away from home (for training or deployment) while on active duty within Naval Special Warfare?

[70] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: How much travel is associated with your current (or proposed) position?

[71] Nathan Scott, *Naval Special Warfare Officer Retention Survey* (Monterey, CA: NPS, September 2013), IRB Protocol Number NPS.2013.0080-IR-EP7-A, Survey Question: What is your current (or anticipated new job) annual monetary compensation?

[72] U.S. Department of Commerce, "Table H-3. Mean Household Income Received by Each Fifth and Top 5 Percent," *U.S. Census Bureau*, September 17, 2013, accessed September 14, 2013, http://www.census.gov/hhes/www/income/data/historical/household/index.html.

"Remain in Military" option will weight lower than both its civilian competitors, and the civilian 60–80th percentile will weight slightly higher than the civilian 80–95th percentile when conducing pair-wise comparisons.

3. Health Benefits

This criterion seeks to provide an objective comparison between health benefits for the SEAL officer compared to his civilian counterparts. For this adjusted AHP example, in order to show how a change in health care benefits may affect the example, health benefit costs for the civilian reflect proposed Affordable Care Act costs. This model still accepts that health benefits are taken care of for military persons (at no additional cost to the individual) remaining on active duty. For a person within the civilian 60–80th percentile or civilian 80–95th percentile income to receive the same level of health care as the SEAL officer, he must purchase the "Gold" plan at a national average cost of $12,700.[73] For this criterion, the full-coverage health benefits (at zero additional cost) received for military service is seen as better than the full-coverage, $12,700 per year cost to a civilian. Affordable Care Act costs represent a marked improvement from the previous hypothetical AHP example (average $14,125 per year),[74] and value changes for this model will present themselves in the next section when a pair-wise comparison is conducted.

4. Growth Potential

This criterion is another subjective criterion not initially included in the hypothetical AHP example calculations. It seeks to draw a comparison between SEAL officer promotion practices in which every SEAL officer generally promotes at the same time as every other officer of his year group within NSW. This military-style growth potential is viewed as worse than the perceived performance-based promotions and growth potential in the civilian sector.

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[73] The Henry J. Kaiser Family Foundation, "Health Reform: Subsidy Calculator – Premium Assistance for Coverage in Exchanges," *Kaiser Family Foundation*, 2013, accessed November 16, 2013, http://kff.org/interactive/subsidy-calculator/.

[74] Pat Kelley, "The Average Health Insurance Cost," *eHow.com*, 2013, accessed November 16, 2013, http://www.ehow.com/about_7275823_average-health-insurance-cost.html.

H.   ADJUSTED CRITERION RANKING AND CRITERION WEIGHTS

Table 24 depicts adjusted pair-wise comparisons for each criterion. Following the same process as the hypothetical AHP example, pair-wise comparisons are conducted in order to develop the criterion weights for this adjusted AHP example.

	Leadership	Stress on Relationships	Retirement Benefits	Health Benefits	Growth Potential	Job Satisfaction	Annual Compensation	Risk
Leadership	1	2	3	3	4	4	5	7
Stress on Relationships	0.5	1	2	2	3	3	4	6
Retirement Benefits	0.333333333	0.5	1	2	3	3	4	5
Health Benefits	0.333333333	0.5	0.5	1	2	3	4	5
Growth Potential	0.25	0.333333333	0.333333333	0.5	1	2	3	4
Job Satisfaction	0.25	0.333333333	0.333333333	0.333333333	0.5	1	2	3
Annual Compensation	0.2	0.25	0.25	0.25	0.333333333	0.5	1	2
Work Related Risk	0.142857143	0.166666667	0.2	0.2	0.25	0.333333333	0.5	1

Table 24.   Adjusted AHP Example Pair-Wise Comparison of Criteria.

The pair-wise comparison from Table 24 results in the criterion weights found in Table 25. For this adjusted AHP example, changes within the "Leadership" criterion will have the largest impact on the final decision, whereas changes within the "Risk" criterion will have the smallest impact on the final decision. In other words, the "Leadership" value of 0.2987 shown in Table 25 is larger than all the other criterion weight values, and the "Risk" vector value of 0.0295 is smaller than all the other criterion weight values.

Criterion Weights	Vector
Leadership	0.298711066
Stress on Relationships	0.17593405
Retirement Benefits	0.124532233
Health Benefits	0.100580635
Growth Potential	0.06758137
Job Satisfaction	0.053861465
Annual Compensation	0.04053491
Risk	0.029586944

Table 25.   Criterion Weights for the Adjusted AHP Example.

Tables 26–33 represent the pair-wise comparisons for each alternative within each criterion. The pair-wise comparisons found in tables 26–33 are used for determining the eigenvector, and subsequently the final values for the alternatives.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.333333333	0.2
Civilian 60-80th Percentile	3	1	0.166666667
Civilian 80-95th Percentile	5	6	1

Table 26.   Alternatives Versus Leadership in Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.142857143	0.166666667
Civilian 60-80th Percentile	7	1	2
Civilian 80-95th Percentile	6	0.5	1

Table 27.   Alternatives Versus Stress on Relationships in Adjusted AHP Example.

	Remain in Military	Civilian 60–80th Percentile	SEAL Civilian Equivalent
Remain in Military	1	7	5
Civilian 60-80th Percentile	0.142857143	1	0.333333333
Civilian 80-95th Percentile	0.2	3	1

Table 28.   Alternatives Versus Retirement Benefits in Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	7	7
Civilian 60-80th Percentile	0.142857143	1	1
Civilian 80-95th Percentile	0.142857143	1	1

Table 29.   Alternatives Versus Health Benefits in Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.2	0.142857143
Civilian 60-80th Percentile	5	1	0.333333333
Civilian 80-95th Percentile	7	3	1

Table 30.   Alternatives Versus Growth Potential in Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	8	6
Civilian 60-80th Percentile	0.125	1	0.2
Civilian 80-95th Percentile	0.166666667	5	1

Table 31.   Alternatives Versus Job Satisfaction in Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	5	0.333333333
Civilian 60-80th Percentile	0.2	1	0.125
Civilian 80-95th Percentile	3	8	1

Table 32.   Alternatives Versus Annual Compensation in Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.111111111	0.111111111
Civilian 60-80th Percentile	9	1	1
Civilian 80-95th Percentile	9	1	1

Table 33.   Alternatives Versus Risk in Adjusted AHP Example.

The pair-wise comparison of each alternative as they relate to each other under each criterion (tables 26–33) results in the eigenvector values found in Table 34.

	Leadership	Stress on Relationships	Retirement Benefits	Health Benefits	Growth Potential	Job Satisfaction	Annual Compensation	Risk
Remain in Military	0.126655629	0.074902724	0.741533514	0.777777778	0.083226633	0.765954805	0.240566038	0.052631579
Civilian 60-80th Percentile	0.15089877	0.607814527	0.096171239	0.111111111	0.241997439	0.084305935	0.075471698	0.473684211
Civilian 80-95th Percentile	0.722445601	0.31728275	0.162295247	0.111111111	0.674775928	0.14973926	0.683962264	0.473684211

Table 34.   Eigenvector Values for Adjusted AHP Example.

The criterion weights (Table 25) multiplied by each criterion's respective eigenvector value results in the final values shown in Table 35:

	FINAL VALUE
Remain in Military	0.279774133
Civilian 60–80th Percentile	0.213131915
Civilian 80–95th Percentile	0.398416625

Table 35.   Final Values for Adjusted AHP Example.

The "Remain in Military" value of 0.2797 is greater than the "Civilian 60–80th Percentile" value of 0.0.2131, but less than the "Civilian 80–95th Percentile" value of 0.3984 (Table 35). This means that, for the SEAL officer whose opinions are represented within the adjusted AHP model, the SEAL officer will remain in the military if he thinks his best civilian alternative most closely relates to the "Civilian 60–80th Percentile," and he will separate from the military if he thinks his civilian alternative is best representative of the "Civilian 80–95th Percentile."

In the earlier hypothetical AHP example, final value changes were most affected by making changes within the "Risk" and "Annual Compensation" criteria, the two most heavily weighted criteria for the model. Recall from earlier in this chapter that when "Risk" for military was improved, and "Annual Compensation" for the SEAL officer was increased to more closely match the "Civilian 80–95th Percentile," the final for the "Remain in Military" alternative became larger than both of the other alternatives, and the best option for the SEAL officer was to remain in the military.

With the adjusted AHP example, however, increasing the final value for the "Remain in Military" alternative is not best achieved by improvements within "Risk" and "Annual Compensation." Recall from the hypothetical AHP example, that improving "Risk" and "Annual Compensation" did increase the "Remain in Military" final value. Instead, for the adjusted AHP example, we will see that improvements in these two criteria will have little effect on the final value because their criterion weight has been lessened. Table 36 has new values within the alternatives pair-wise comparison chart that

are representative of increased Military Annual Compensation as closer to that of the "Civilian 80–95th Percentile." Table 37 has values within the alternatives pair-wise comparison chart that are representative of lowered military risk levels for the adjusted AHP example. These changes were made to the adjusted AHP example to show the ineffectiveness of improving the military annual compensation and decreasing military risk when these criteria have a low criterion weight. Table 38 reflects the new final values within the adjusted AHP example with changes to annual compensation and risk.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	8	1
Civilian 60-80th Percentile	0.125	1	0.125
Civilian 80-95th Percentile	1	8	1

Table 36.   Alternatives Versus Annual Compensation With Numerical Value Changes Reflecting Increased Military Annual Compensation Equal to that of the Civilian 80–95th Percentile in the Adjusted AHP Example.

	Remain in Military	Civilian 60-80th Percentile	Civilian 80-95th Percentile
Remain in Military	1	0.5	0.5
Civilian 60-80th Percentile	2	1	1
Civilian 80-95th Percentile	2	1	1

Table 37.   Alternatives Versus Risk With Numerical Value Changes Reflecting Lower Military Risk Levels in the Adjusted AHP Example.

	FINAL VALUE
Remain in Military	0.293458244
Civilian 60-80th Percentile	0.210276993
Civilian 80-95th Percentile	0.387587437

Table 38.   Final Values for Adjusted AHP Example With Increased Military Annual Compensation and Lower Military Risk Levels.

For the adjusted AHP example, with new criterion weight values, improvements within the "Annual Compensation" and "Risk" criteria result in no change in the final decision for the individual. Namely, as indicated by Table 38, the SEAL officer will opt to remain in the military when comparing himself to the 60–80th Percentile, and he will separate when comparing himself to the Civilian 80–95th Percentile—the same

conclusions one would have made for the adjusted AHP example before improved military annual compensation and lowered military risk.

However, for the adjusted AHP example, recall that the "Leadership" criterion had the highest criterion weight value, and so increased retention for this individual will come from improvements within NSW's leadership. Table 39 contains the new values for the pair-wise comparison between alternatives as they relate to leadership. The numbers have been changed from their original adjusted AHP example values to reflect better NSW leadership when compared to the civilian sector and leadership that is perceived as proactive, forward thinking and organized. The final values that result from changes to improved NSW leadership for the adjusted AHP example may be seen in Table 40. Table 41 contains new values for the pair-wise comparison between alternatives that reflects NSW leadership as equal in quality to leadership in the civilian sector. Table 42 reflects final values with NSW leadership is equal in quality to the civilian sector.

	Remain in Military	Civilian 60–80th Percentile	Civilian 80–95th Percentile
Remain in Military	1	3	2
Civilian 60–80th Percentile	0.333333333	1	0.166666667
Civilian 80–95th Percentile	0.5	6	1

Table 39.   Alternatives Versus Leadership Within Adjusted AHP Example Depicting Military Leadership as Better Than Civilian Leadership.

	FINAL VALUE
Remain in Military	0.403897272
Civilian 60–80th Percentile	0.206523128
Civilian 80–95th Percentile	0.280902273

Table 40.   Final Values for Adjusted AHP Example After Improved Military Leadership.

	Remain in Military	Civilian 60–80th Percentile	Civilian 80–95th Percentile
Remain in Military	1	1	1
Civilian 60–80th Percentile	1	1	1
Civilian 80–95th Percentile	1	1	1

Table 41.   Alternatives Versus Leadership Within Adjusted AHP Example Depicting Military Leadership Equal in Quality to Civilian Leadership.

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	FINAL VALUE
Remain in Military	0.341511051
Civilian 60-80th Percentile	0.267627138
Civilian 80-95th Percentile	0.282184484

Table 42.   Final Values for Adjusted AHP Example When Military Leadership is Equal in Quality to Civilian Leadership.

Now, presuming improved NSW leadership is equal in quality or better than its perceived civilian competitors, the SEAL officer whose views most closely relate to those represented by the adjusted AHP example will opt to remain in the military over all other alternatives represented.

I.   INFLUENCING RETENTION BY IDENTIFYING LONG-TERM COMMUNITY ISSUES

The Analytical Hierarchy Process, as it has been outlined by both the hypothetical and the adjusted AHP examples, can be a tool for identifying long-term community retention issues. Because the AHP model is a useful tool when making decisions involving multiple alternatives with multiple subjective or objective criteria, it can be used to identify those areas of concern for NSW that need improving, but that require systemic community changes to do so.

As the examples outlined in the previous sections have demonstrated, influencing the final decision for the SEAL officer is achieved by making improvements within most heavily weighted criteria. Being able to identify the most heavily weighted criteria, then, becomes the next necessary concern for NSW. Some form of the survey outlined in Appendix D, administered to those officers opting to separate from NSW, would serve as a method for identifying the most important criteria for improving retention. Such a survey would ask the individual to make comparisons between his SEAL career and his perceived civilian work-life.

Comparisons between the SEAL career and the perceived civilian work-life could then be converted into numerical values for use in the AHP model. Recall from our two previous AHP examples that the 9-point scale found in Appendix C is used for comparison of each criterion with one another in order to develop criterion weights, as

well as for comparison of each alternative as they compare to one another within each criterion in order to develop the eigenvector. Survey inputs, then, could be converted into the 9-point scale for use in the AHP model. For example, if criterion A received an average rating of "3" as its level of applicability for separating by all survey takers, and criterion B received an average rating of "9," then criterion A is one third as important as criterion B when it comes to creating the criterion weights table. Converting to the 9-point scale, criterion B would receive a "3" when compared to criterion A, and criterion A would receive a "1/3" when compared to criterion B. A similar process comparing each alternative to one another within each criterion can be done in order to determine the eigenvector.

The survey could identify applicable criterion to the SEAL officer's decision to retain or separate. Final values calculated from multiplication of the criterion weights matrix and the eigenvector would show the NSW community where the SEAL career stands in relation to civilian competitors. Criterion weights calculated from the survey would show NSW where should focus the majority of its retention efforts. Recall from the hypothetical and adjusted AHP examples, the difference in calculated criterion weights, shown again here in Tables 43 and 44.

Criterion Weights	Vector
Risk	0.3619471
Annual Compensation	0.2052167
Retirement Benefits	0.1355721
Time Away: Deploy	0.0889384
Job Satisfaction	0.0697824
Health Benefits	0.0460977
Time Away: Training	0.0342123

Table 43.   Criterion Weights for the Hypothetical AHP Example.

Criterion Weights	Vector
Leadership	0.298711066
Stress on Relationships	0.17593405
Retirement Benefits	0.124532233
Health Benefits	0.100580635
Growth Potential	0.06758137
Job Satisfaction	0.053861465
Annual Compensation	0.04053491
Risk	0.029586944

Table 44.   Criterion Weights for the Adjusted AHP Example.

If NSW conducted a survey of its separating officers and calculated criterion weights similar to those shown in Table 43 it would know that improvements in "Risk" or "Annual Compensation" would hold the most relevance to improving retention for the hypothetical example because they have the highest criterion weights. "Leadership" or "Stress on Relationships" would hold the most relevance for improving retention for the adjusted AHP example in Table 44. Conversely, improvements within "Time Away: Training" in the hypothetical example would likely have little to no effect on the overall retention, and improvements within "Risk" would have little to no effect on retention in the adjusted AHP example. In other words, annual, individual surveys applied to AHP analysis could be used to better predict and affect retention within NSW.

J.   AHP CONCLUSIONS

This chapter applied the analytical hierarchy process to NSW retention. We made changes within the alternatives pair-wise comparisons in order to show how improvements within a criterion affected the final values. The adjusted AHP example was used to show the versatility of the AHP model by making changes in criterion and analyzing their effect on the criterion weights and the overall final values for the AHP model. As it applies to NSW retention, findings suggest that the AHP model is a useful tool for identifying the most applicable criterion for use in influencing individual SEAL career decisions.

Since criterion weights and pair-wise comparisons are subjective in nature, this chapter performed analysis of changes within the AHP model as it relates to changes with

the criterion weights and the pair-wise comparisons because the level of emphasis placed on one criterion for individual A may be different than the emphasis placed on the same criterion for individual B. As such, from an NSW community manger perspective, influencing retention or separation will likely require reshaping the AHP eigenvector by allocating resources into areas of concern that might be more readily influenced or by better managing assignments. The AHP model can identify these areas of concern by determining the most heavily weighted criteria.

The Analytical Hierarchy Process is not a perfect solution for deciding between alternatives, but it does give one insight into how subjective criteria might be reshaped to influence objective decisions. As it pertains to NSW, the AHP model could be a viable tool for identifying the most applicable systemic, long-term, areas of concern for improving the community and subsequent officer retention. If applied to results from annual surveys, then the AHP could inform managers regarding decisions that could affect individual officer retention.

IV. CONCLUSIONS: NEAR-TERM AND LONG-TERM RETENTION

Naval Special Warfare has lost an average of more than 10% of its LCDR officer corps each year over the last four years (2010–2013).[75] Leaders in NSW believe the community has a retention problem within its midlevel officer corps.[76] As such, this thesis sought to provide the NSW community with both near-term and long-term solutions to the retention problem. Analysis concluded that the ACOL model was a viable tool for determining near-term, monetary retention solutions, and the AHP model was a viable too for use in determining long-term organizational retention solutions for NSW.

For near-term solutions, or solutions that NSW might implement with immediate improvements in retaining its LCDRs, the ACOL model was used for conducting financial comparisons between the SEAL officer and his civilian counterparts. The ACOL examples found that the financial cost of leaving the military began to decrease after year nine. Under current conditions, the taste factor for a SEAL officer who is contemplating separation from NSW falls in the region that will opt to separate. The ACOL model also showed us that it was only after a CSRB of $25K was offered at YOS 9 that the taste factor finally fell inside the region where the SEAL officer would opt to remain in the military. The ACOL chapter concluded by modeling the effects of a 50% lump offering at YOS 10 of an eight year CSRB bonus contract. Structuring the CSRB bonus into this lump sum offering allowed for a shift in financial injection from YOS 9 to YOS 10, and placed the taste factor well within the region where the SEAL officer would opt to remain in the military. The ACOL model is a viable tool for determining near-term solutions to NSW's retention problem.

For long-term solutions, or solutions that might require more time and systemic organizational change, the AHP model presents a viable tool for use in determining

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[75] Jeromy Williams and Darin Evenson, "SEAL Officer (LCDR) Separations," *NSW Officer Detailing and Community Management Brief*, February 2013.

[76] Observations made in conjunction with the office of the Naval Special Warfare Community Manager, October 25, 2013.

applicable areas of focus for the NSW community for improving retention. The AHP model identifies these areas of focus through the criterion weights. The most heavily weighted criterion will have the greatest effect on the final values for the alternatives. Conversely, the AHP model can also show NSW which criterion it should not put attention into by showing which criterion hold a low criterion weight value with little effectiveness in improving retention. If NSW implemented an annual survey in connection with the AHP model of an individual's preferences regarding retention, then the AHP model might assist career managers by tailoring assignments to exploit individual retention preferences.

The NSW community stands to improve the retention of its midlevel officers in both the near and long-term if it implements financial recommendations from the ACOL model, while simultaneously using the AHP model to maintain a pulse on community organizational issues lending to any problems with retention.

APPENDIX A. SPECIAL OPERATIONS FORCES STAFFING

	FY 2010 Requirement	FY 2015 Requirement	Requirement Growth (%)	FY 2010 Inventory	Ratio
Army					
Special Forces Officer	1,070	1,123	5%	1,362	1.27
SOF Technical Warrant Officer	566	647	14%	458	0.81
Special Forces Sergeant	4,656	5,206	12%	4,877	1.05
Special Forces Senior Sergeant	1,199	1,303	9%	1,164	0.97
Navy					
Special Operations Officer	543	679	25%	509	0.94
Special Warfare Officer	237	329	39%	214	0.90
Special Operations Enlisted	1,035	1,553	50%	905	0.87
Navy Diver (First Class)	1,231	1,383	12%	1,193	0.97
Special Warfare Combatant Craft Crew	770	822	7%	757	0.98
Special Operator	1,699	2,173	28%	1,580	0.93

Table 45.   Table Depicting Department of Defense Mandated Growth Percentages for the Navy.[77]

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[77] Department of Defense, *The 11th Quadrennial Review of Military Compensation*, Office of the Under Secretary of Defense for Personnel and Readiness, Washington, DC: 2012 (Table 3–3. Special Operations Forces Staffing, Chapter 3, page 42).

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APPENDIX B. MILITARY COMPENSATION AMMOUNTS BY YEAR (YOS 1–13 EQUATES TO 2001–2013)

MONTHLY

YOS	BASE PAY	BAS	BAH SAN DIEGO	BAH NORFOLK	BAH AVG	SPECIAL PAY	OCP	TOTAL
1	$ 1,997.57	$ 160.42	$ 857.00	$ 654.00	$ 755.50	$ -	$ -	$ 2,913.49
2	$ 2,097.67	$ 166.37	$ 1,041.00	$ 702.00	$ 871.50	$ -	$ -	$ 3,135.54
3	$ 2,864.70	$ 167.20	$ 1,265.00	$ 852.00	$ 1,058.50	$ 615.00	$ -	$ 4,705.40
4	$ 4,027.20	$ 175.23	$ 1,882.00	$ 1,130.00	$ 1,506.00	$ 615.00	$ -	$ 6,323.43
5	$ 4,168.20	$ 179.61	$ 2,006.00	$ 1,332.00	$ 1,669.00	$ 615.00	$ -	$ 6,631.81
6	$ 4,503.00	$ 187.49	$ 2,050.00	$ 1,562.00	$ 1,806.00	$ 615.00	$ 1,250.00	$ 8,361.49
7	$ 4,602.00	$ 192.74	$ 2,051.00	$ 1,592.00	$ 1,821.50	$ 615.00	$ 1,250.00	$ 8,481.24
8	$ 5,002.50	$ 202.76	$ 2,220.00	$ 1,753.00	$ 1,986.50	$ 615.00	$ 1,250.00	$ 9,056.76
9	$ 5,197.20	$ 223.04	$ 2,222.00	$ 1,755.00	$ 1,988.50	$ 615.00	$ 1,250.00	$ 9,273.74
10	$ 6,230.10	$ 223.04	$ 2,601.00	$ 2,142.00	$ 2,371.50	$ 615.00	$ 1,250.00	$ 10,689.64
11	$ 6,317.40	$ 223.84	$ 2,823.00	$ 2,091.00	$ 2,457.00	$ 615.00	$ 1,250.00	$ 10,863.24
12	$ 6,738.30	$ 239.96	$ 2,640.00	$ 2,169.00	$ 2,404.50	$ 615.00	$ 1,250.00	$ 11,247.76
13	$ 6,852.90	$ 242.60	$ 2,832.00	$ 2,178.00	$ 2,505.00	$ 615.00	$ 1,250.00	$ 11,465.50

ANNUAL

YOS	BASE PAY	BAS	BAH SAN DIEGO	BAH NORFOLK	BAH AVG	SPECIAL PAY	OCP	TOTAL
1	$ 23,970.84	$ 1,925.04	$ 10,284.00	$ 7,848.00	$ 9,066.00	$ -	$ -	$ 34,961.88
2	$ 25,172.04	$ 1,996.44	$ 12,492.00	$ 8,424.00	$ 10,458.00	$ -	$ -	$ 37,626.48
3	$ 34,376.40	$ 2,006.40	$ 15,180.00	$ 10,224.00	$ 12,702.00	$ 7,380.00	$ -	$ 56,464.80
4	$ 48,326.40	$ 2,102.76	$ 22,584.00	$ 13,560.00	$ 18,072.00	$ 7,380.00	$ -	$ 75,881.16
5	$ 50,018.40	$ 2,155.32	$ 24,072.00	$ 15,984.00	$ 20,028.00	$ 7,380.00	$ -	$ 79,581.72
6	$ 54,036.00	$ 2,249.88	$ 24,600.00	$ 18,744.00	$ 21,672.00	$ 7,380.00	$ 15,000.00	$ 100,337.88
7	$ 55,224.00	$ 2,312.88	$ 24,612.00	$ 19,104.00	$ 21,858.00	$ 7,380.00	$ 15,000.00	$ 101,774.88
8	$ 60,030.00	$ 2,433.12	$ 26,640.00	$ 21,036.00	$ 23,838.00	$ 7,380.00	$ 15,000.00	$ 108,681.12
9	$ 62,366.40	$ 2,676.48	$ 26,664.00	$ 21,060.00	$ 23,862.00	$ 7,380.00	$ 15,000.00	$ 111,284.88
10	$ 74,761.20	$ 2,676.48	$ 31,212.00	$ 25,704.00	$ 28,458.00	$ 7,380.00	$ 15,000.00	$ 128,275.68
11	$ 75,808.80	$ 2,686.08	$ 33,876.00	$ 25,092.00	$ 29,484.00	$ 7,380.00	$ 15,000.00	$ 130,358.88
12	$ 80,859.60	$ 2,879.52	$ 31,680.00	$ 26,028.00	$ 28,854.00	$ 7,380.00	$ 15,000.00	$ 134,973.12
13	$ 82,234.80	$ 2,911.20	$ 33,984.00	$ 26,136.00	$ 30,060.00	$ 7,380.00	$ 15,000.00	$ 137,586.00

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APPENDIX C. 9–POINT SCALE

Pair-wise	Importance using the 1-9 scale
1	Equal
2	
3	Moderate
4	
5	Strong
6	
7	Very Strong
8	
9	Extreme

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APPENDIX D. RECOMMENDED SURVEY QUESTIONS FOR IMPROVING NSW RETENTION

1. Comparing your military career with your perceived civilian career, please list your top eight considerations for separating from military service (examples might include: retirement benefits, financial compensation, growth potential, leadership opportunity, work related risk, time away from home)

2. For each of the eight considerations from above, please write what you believe its military equivalent to be.

   a. Example: financial compensation (military) = $128K gross per year

   b. Example: time away from home (military) = 90 days per year

   c. Example: work related risk (military) = HIGH

3. For each of the eight considerations from above, please write what you perceive its civilian equivalent will be.

   a. Example: financial compensation (civilian) = $150K gross per year

   b. Example: time away from home (civilian) = 20 days per year

   c. Example: work related risk (civilian) = VERY LOW

4. For each of the eight considerations, please rate, on a scale from 1–10 (where 1 is least applicable, and 10 is most applicable), the level of applicability that each consideration has on your decision to separate or remain on active duty service.

   a. Example: retirement benefits; level of applicability – 8

   b. Example: time away from home; level of applicability – 8

   c. Example: work related risk; level of applicability – 4

   d. Example: financial compensation; level of applicability – 3

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